THIS WEEK'S National Petroleum NEWS

Coming Meetings

American Petroleum Institute, Division of Production, Southwestern District, Angelina Hotel, Lufkin, Tex., Sept. 24, 25.

American Institute of Mining and Metallurgical Engineers, Petroleum Division, Houston, Tex., Oct. 2, 3.

National Safety Council, Hotel Stevens, Chicago, Oct. 12 to 16.

Big Four State Jobbers Association (Nebraska, Iowa, Kansas and Missouri), Hotel President, Kansas City, Mo., Oct. 27, 28, 29.

Virginia Oil Men's Association, and Virginia Sub-Committee Code of Ethics, Patrick Henry Hotel, Roanoke, Va., Oct. 29, 30.

American Petroleum Institute annual meeting, Stevens Hotel, Chicago, Nov. 10, 11, 12.

Third International Conference on Bituminous Coal, at Carnegie Institute of Technology, Schenley Park, Pittsburgh, Pa., Nov. 16 to 21.

Indiana Petroleum Association, Hotel Severin, Indianapolis, Ind., Dec. 2, 3.

Geological Society of America, Mayo Hotel, Tulsa, Dec. 28 to 31.

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Photo by Blank-Stoller Inc.

HARRY C. WIESS, recently appointed to membership on the American Petroleum Institute refinery statistics and economics committee, is a vice president of Humble Oil & Refining Co., Houston, in executive charge of plant operations. Mr. Wiess' appointment on the A.P.I. Committee followed the recent resignation of Edward T. Moore, president of Simms Oil Co., Dallas.

After Mr. Wiess was graduated from Princeton in 1909, he entered the petroleum industry as vice president of the old Paraffine and Reliance oil companies, headed by his father, at Beaumont. Later, he became associated with W. S. Farish and R. L. Blaffer, now president and treasurer, respectively, of Humble Oil & Refining Co., but then operating as a partnership.

Their properties were merged with those of R. S. Sterling in the reorganized Humble Oil & Refining Co., in 1917, when Standard Oil Co. of New Jersey acquired controlling interest in the group interests. Mr. Wiess was a director of the reorganized Humble from the start; but first became active in it in 1919 when he was elected vice president in charge of refining operations.

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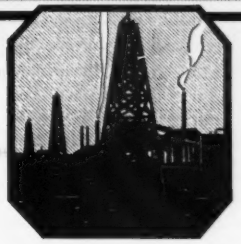

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Vol. 23 **CLEVELAND, SEPTEMBER 16, 1931** **No. 37**

Second Ethyl Gasoline Grade Introduced By Imperial Oil Ltd. in Canada

CLEVELAND, Sept. 14

IMPERIAL OIL, LTD., has obtained a contract from the Ethyl Gasoline Corp. under which it will be permitted to mix tetraethyl lead with its standard grade of gasoline to improve the anti-knock rating. Similar contracts are being offered to other Canadian gasoline distributors.

In the United States the Ethyl corporation has not granted any similar contracts on motor gasoline but is seriously considering the question. The company has, however, drawn up a contract under which refiners may manufacture a second grade of aviation gasoline containing the Ethyl anti-knock compound.

The new Imperial gasoline is to be marketed under the trade name "Imperial Three Star." The Ethyl trademark will not be used in connection with the sale of the product although dispensing pumps will carry the same warning used on Ethyl pumps to the effect that the gasoline contains lead and is not to be used for any purpose except that of operating an internal combustion engine.

The new Imperial gasoline is colored green so that it may not be confused with Imperial Ethyl. It is not being introduced by the company as a new product and the advertising being done does not state that it contains Ethyl fluid.

"Imperial Three Star" is being sold at 3½ cents per Imperial gallon less than Imperial Ethyl. This is approximately equal to the 3-cent differential between standard and Ethyl gasolines in this country when the difference between Imperial and U. S. gallons is taken into consideration.

Under terms of the Imperial's contract with the Ethyl corporation the new gasoline may have a minimum octane number of 65 and a maximum eight octane numbers below the octane number of Imperial Ethyl. The gasoline may not contain more than 1.5 cubic centimeters of Ethyl fluid, half the maximum allowed in Ethyl gasoline.

It is understood that the Imperial is bringing its new gasoline up to 70 octane number which would place Imperial Ethyl at 78 octane number or higher. The company is bringing the new grade up as high as possible in anti-knock qualities and then adding small quantities of Ethyl, much less than is used in Imperial Ethyl.

At certain points Imperial is selling a third grade of gasoline. This is a colorless product without special anti-knock qualities.

The new combination Ethyl contract under which two ethylized aviation gasolines may be manufactured by refiners in this country provides that the new grade shall contain a minimum of 0.3 cubic centimeter of Ethyl fluid and a maximum of 1.5 cubic centimeters. It is to be colored green and have an octane number range from 70 to 74. It is not to be sold in connection with the Ethyl trademark.

The regular Ethyl aviation gasoline is to contain from 0.75 to 3 cubic centimeters to Ethyl fluid, be colored blue and have an octane number of at least 80.

REFINERS must charge at least the price of the automobile grade of Ethyl for the green grade and at least 1.5 cents per gallon more for the blue grade.

Blending costs remain at 0.35 cent per cubic centimeter with a gallonage charge of 0.5 cent per gallon of gasoline blended.

Base gasoline must meet the following specifications: distillations, at least 10 per cent over at 167 F., 50 per cent at 221 F., 90 per cent at 311F., 96 per cent at 347 F., end point not higher than 374 F.; 96 per cent recovery, not over 2 per cent loss;

vapor pressure, not over 8 pounds Reid at 100 F.; sulfur, corrosion, doctor and acidity tests must equal those of U. S. Domestic Aviation; gum and stability must meet U. S. Army Air Corps Specification Y-3557-B.

If the new policy adopted by the Imperial should spread to the United States as is being considered it would permit refiners to market a regular grade of gasoline which would be clearly different in anti-knock characteristics from the third grade probably without resorting to extra "reforming" operations in cracking straight run naphthas. Refiners running crude which does not possess high anti-knock qualities would be most likely to find the plan advantageous.

One difficulty which has been encountered in marketing a third grade of gasoline in the middle west has been that there was not enough difference between the octane number of the third grade and the regular grade so that the average motorist could tell the difference, particularly in warm weather when starting qualities are not as obvious as in the winter.

Would Regulate New Oil Pools By Control of Carriers

WASHINGTON, Sept. 12

POSSIBILITY of new laws and amendments to old statutes regulating commerce as a means of relief for the oil industry and other natural resource industries which face the problem of regulating production through co-operative restraint, is to be discussed by the American Bar Association at its annual meeting at Atlantic City, Sept. 17, 18 and 19.

James Stanley, New York, former counsel for the Continental Oil Co., in an address entitled "The Drama of the Oil Industry—Calling for Federal Regulation," was to propose a bill to introduce in Congress calling for regulation of carriers of oil, either pipelines or railroads, by a Federal Oil Conservation Board in the same way that the Interstate Commerce Commission now regulates the railroads.

"Legislative enactments empowering state commissions to compel the proration of oil pools within the state are salutary," his message was to contain. "But even if such measures shall stand the test of constitutional validity, they do not cure the evil—they are in nature like locking the barn after the horse is stolen. They do not prohibit or even retard the bringing in of new fields of production. State laws do not, therefore, fully and adequately solve the problem, either from the standpoint of stabilization in which the industry is interested, or that of conservation in which the nation is vitally concerned."

The legislation Mr. Stanley proposes would be applicable only to oil pools hereafter discovered. It is to be enforced by a Federal Oil Conservation Board. Its five members, to be appointed by the President, would be selected, one each, from one of these five general producing districts, Mid-Continent, Gulf Coast, Eastern, Rocky Mountain and Western. Members would serve for 6 years and to receive $10,000 per year each and traveling expenses.

The board would take over the powers now held by the Interstate Commerce Commission with respect to oil pipelines under the Transportation Act of 1920.

The board would be empowered, after proper hearing, to grant or deny an application, by either a pipeline or railroad, to make extension of its transportation facilities to a new oil pool.

No carrier of oil, either pipeline or railroad, could extend its facilities to a new field without a certificate of permission from the board. The board might deny the application of a carrier if it deems the supply of oil from the then producing areas sufficient for market needs of domestic consumption, or if it believes the oil to be transported from the new district is not to be extracted by efficient conservation methods.

In granting the application of a carrier, the board could fix the quantity of oil to be transported. The board would be empowered to prohibit the transportation of crude oil from new pools, or products thereof, unless a certificate of permission had been secured.

The proposed act also provides that the anti-trust laws are to be modified to permit operators or producers of oil to make agreements for the co-operative or unit development of new oil pools when made for the promotion of conservation.

The board would have power to investigate and publish facts regarding the production, supply and demand for crude and also for refined products, and to co-operate with agencies in oil producing states to promote conservation of oil and to prevent its waste.

The bar association is expected, at its meeting, to pass resolutions authorizing its Committee on Conservation of Mineral Resources to devote its attention to the following:

Thorough investigation of the federal anti-trust laws, and strides of obtaining such changes in those laws as may be found desirable with respect to mineral resources. Co-operation with the Oil States Advisory Committee and the Federal Oil Conservation Board in the preparation of an interstate compact or in such other plan as may seem feasible for the stabilization of the petroleum industry.

Co-operation with the American Petroleum Institute, National Coal Association and the Federal Trade Commission in the establishment and preservation of satisfactory codes of practice for the marketing of refined petroleum products and of coal.

Lending aid in the endeavor to obtain uniform administrative provisions and administration of state gasoline tax laws.

THE EDITORS' VIEWPOINT

Detonation Subcommittee Is Doing a Thorough Job

APPROVAL of the report of the Co-operative Fuel Research Subcommittee recommending adoption of the tentative standard anti-knock test engine brings to mind two significant facts involved in the history of the research.

The first is that the subcommittee has handled a difficult, tedious technical problem in a workmanlike and thorough-going fashion. Before this group was formed the determination of knock ratings of motor fuels was in a state of chaos. Various methods had been developed by independent investigators in different laboratories, all of them having considerable merit, and representing honest and intelligent attempts to solve a problem which was more and more insistently demanding solution. Lack of any system of correlation of results obtained by different methods, disagreement of results on the same method, obtained in different laboratories, all made the situation totally unsatisfactory.

The organization of the subcommittee was for the purpose of developing a really dependable test method, and in this manner eliminating the confusion. Realizing the magnitude of the job, the attack on it was typical of seasoned searchers, beginning with as nearly fundamental questions as the task warranted, and working out a solution of these before lesser problems were attacked. Frequently writers, commenting in trade and technical journals and in meetings, have urged more speed in handling the work; sometimes the remarks were more or less disparaging, if not to the subcommittee, then to the conduct of the investigation.

Fortunately the subcommittee flatly refused to be stampeded. We believe that not only is its conduct to be commended, but that such a plan of action as has been followed will reflect its soundness in the excellence of the method which is recommended to the automotive and petroleum industries for adoption.

The second fact to warrant consideration is the splendid co-operation between the American group and that representing the British Institute of Petroleum Technologists. At both the 1930 and 1931 S. A. E. meetings in Detroit technologists from this Institute have presented papers giving the gist of the results they have obtained, and comparing notes on the problem.

At the last meeting announcement was made that the British organization have adopted the system recently adopted by the American Subcommittee of rating anti-knock property in terms of octane numbers. Efforts are being made by both groups to interest other European technological organizations in the use of the new C. F. R. engine, and in use of the method in general. Information memoranda are exchanged by the two groups from time to time, to keep each other posted as to progress made.

If this spirit of co-operation results in making the test method international in scope and use, it should prove an invaluable force in promoting further international co-operation in the solution of problems which concern the world's oil technologists.

Montana Goes «High Sulfur»

EFFECTIVE July 1, the state of Montana last spring passed a law increasing the permissible maximum of sulfur in motor fuel from one-tenth to two-tenths of one per cent.

This is the first action, by any state with gasoline specifications, to break away from the Federal specification of one-tenth of one per cent of sulfur as maximum in gasoline. Such a step is of immediate interest to practically every unit in the oil refining industry, and the results of this action will be watched with interest.

The subject of whether or not the present sulfur specification is too low and works a hardship on refiner and consumer alike has been discussed widely during the last few years, but apparently the interest in the refining industry has not reached a pitch where it has been possible to institute concerted action to investigate this problem and obtain definite information, either in support or in refutation of the claim, that a higher sulfur limit would be detrimental.

More than a year ago the U. S. Bureau of Standards stated it was planning an investigation of the problem, but wished to do it only on public funds. It is to be hoped the bureau will be able to get at the problem very shortly.

Certainly, if the question is of major importance to refiners, on a dollars-and-cents basis alone, it is not one to be allowed to go unsettled indefinitely. If higher sulfur may safely be permitted, then it is profligate to continue to penalize the consumer by useless additional refining expense, which he must eventually pay. Certainly at present the margin between profit and loss in refining is a precariously narrow one—in many cases non-existent.

If an appreciable increase in the sulfur limit is not permissible, then this information, based on dependable experimental data, should be obtained without unreasonable delay. The question should be settled, as soon as possible, with definiteness and dispatch.

Plan State Production Allotments And Limit on Crude Imports

By Lawrence E. Smith

N. P. N. STAFF WRITER

OKLAHOMA CITY, Sept. 12 ANOTHER approach to the allocation of crude oil production by states and limitation of imports was made in Oklahoma City Sept. 11 when public utility commissioners of Kansas and Oklahoma met in all day session.

The Oil States Advisory Committee, Cicero I. Murray, chairman, joined the conference which had been called by Thurman Hill, member of the Kansas Public Service Commission. The commissioners, the oil states committee and several oil company executives, spent more than three hours in closed conference and came out to the general meeting with these suggested figures:

State	Allowable Production
Oklahoma	546,000
Kansas	110,000
California	500,000
New Mexico	50,000
Rocky Mountains	55,000
Louisiana-Arkansas	110,000
Eastern	108,000
Texas	900,000
	2,379,000

No figure was set on imports. Representatives of the four principal importing companies were said by Mr. Hill, who presided, to have stated that they believed the importers would be willing to reduce in the same percentage as domestic production is cut, taking the 1928 figures as the base.

A committee was appointed to call upon importing company executives to arrange a conference, with the assistance of Secretary of Commerce Lamont. The committee consists of Cicero I. Murray, C. V. Terrell, of the Railroad Commission of Texas; Wirt Franklin, president of the Independent Petroleum Association of America; W. N. Davis, president of the Mid-Continent Oil & Gas Association and Thurman Hill. They are due to leave for Washington Sept. 19.

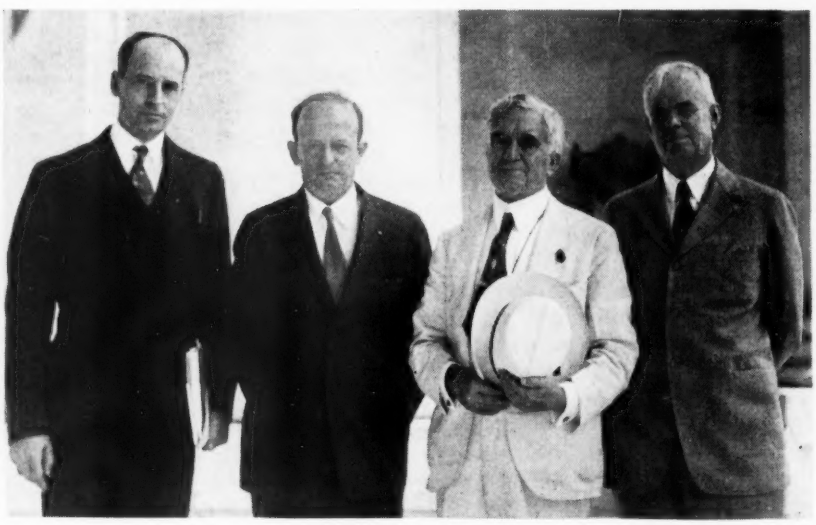
Texas was represented at the meeting only by Cullen F. Thomas, of Dallas, who was designated by Gov. Sterling as his personal representative. The Railroad Commission made no appearance, although Chairman Hill had invited the commission three weeks ago.

Mr. Thomas talked to Gov. Sterling before the conference adjourned and gave him an outline of the plan. The governor tentatively accepted, for himself, and invited a committee to come to Austin and present to himself and the Railroad Commission the full details. The committee named to appear in Austin, Sept. 18, consisted of Cicero I. Murray, Paul Walker, chairman of the Oklahoma Corporation Commission; Wirt Franklin, E. B. Reeser, president of the American Petroleum Institute, and Thurman Hill.

Gov. W. H. Murray, of Oklahoma, was yet to be consulted on the plan as this is written. Chairman Hill announced that if the plan is approved by the Texas authorities, it will become effective on or about Oct. 1, would be tried for 30 days and if it doesn't effect the desired degree of stability, another meeting will be held to plan further curtailment.

Cicero I. Murray, speaking for his committee, said that body had undertaken to work out a statistical set-up for not only the United States and foreign countries which send oil into U. S. markets, but for the entire world. The allocations given for the U. S., he said, had been adopted by his committee for the rest of this year and for all of 1932, with slight changes for 1933 and 1934. The allotment of production, he said, contemplates a withdrawal from storage of 71 million barrels in 1932; 76 million in 1933 and 83 million in 1934.

It was contemplated, in the allocation for Texas, that the



Left to right: Thurman Hill, of the Kansas Public Service Commission, who was chairman of the Oklahoma City conference; Paul Walker, chairman of the Oklahoma Corporation Commission and Cullen F. Thomas, Dallas, personal representative of the governor of Texas and Chairman Jess W. Greenleaf, of the Kansas commission

East Texas area must be held to 350,000 barrels, with other districts substantially as they are at present. That means a cut of 50,000 barrels from the present estimated daily output.

Questions of allotting production to the several pools would be left to the public utility commissions of the several states.

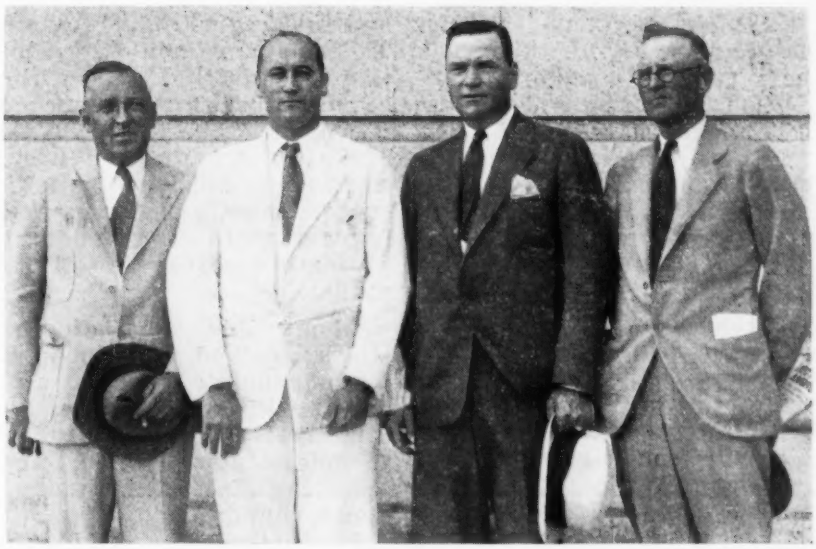
While, on the face of it, the whole set-up looks much like a child's letter to Santa Claus, asking for a lot of desirable things, oil men were hopeful that something would come of the planning. The weak spot, of course, is East Texas.

The governor of Texas is quoted as saying that he will maintain martial law in East Texas for 90 days or more; while that condition prevails there will be a fair chance of enforcing the limiting order of the Railroad Commission. It is difficult to get into court and suspend the operation of the orders while martial law prevails. But the military rule cannot be applied forever and it is feared that with the raising of that barrier some operators will make a bee line for the court house.

The meeting was called to order by tall, smiling, Thurman Hill, who as member of the Public Service Commission of Kansas, has charge of enforcement of the Kansas conservation law. With him was J. W. Greenleaf, chairman of the Kansas commission. All three of the Oklahoma corporation commissioners, Chairman Paul Walker, Roy Hughes, and C. C. Childers took their seats with the presiding officer. They were joined by Cicero I. Murray. Six other members of the latter's oil states committee were present, only the Texas, Arkansas and Louisiana members failing to come.

Mr. Hill opened the meeting by submitting a plan for allocation of production by states. It was as follows:

Texas	800,000
Oklahoma	550,000
Kansas	150,000
Arkansas	37,000
Louisiana	50,000
New Mexico	45,000
Rocky Mtn. States	52,000
Eastern	108,000
California	500,000
Imports	100,000
	2,392,000



Members of the oil advisory committee to the Public Service Commission of Kansas. Left to right: Ralph J. Pryor, of the producing firm, Slick, Pryor & Lockhart, Wichita; Marvin Lee, consulting geologist, Wichita; Rex L. Kent, Kent Oil Co., Salina and Lee Scott, Vickers Petroleum Co., Wichita

He explained that this was offered as a basis for discussion. He immediately hitched curtailment up with price. He defined the four reasons for curtailment as the prevention of physical waste, the obtaining of a fair price for producers and a reasonable return for refiners and marketers; increased royalties and rentals for the farmer and steady tax revenue for the state.

"Five years ago the mention of price in a meeting of regulatory bodies would have caused shivering and shuddering of spines," said Mr. Hill. "Conditions today require direct action. The federal court decisions forbidding states to fix oil prices are based on erroneous conclusions that oil and its derivatives are not tinged with public interest. After the past year's oil activities only an indifferent court, insensible to what is going on about it, would deny the public interest in oil. For instance, there are almost as many users of gasoline as of electricity and the courts do not hesitate in permitting the states to regulate electric rates through our commissions. . . .

"Perhaps the most authentic and exhaustive study of production costs is contained in the report of the U. S. Tariff Commission. After a long and thorough study of costs of producing oil by large and small producers in the Mid-Continent area, this commission reported average costs of a barrel of oil delivered aboveground at wells to be $1.10. The common understanding of price has been based on 36 gravity oil, usually with two cents added for each degree above and two cents subtracted for each degree below. . . ."

Mr. Hill said his curtailment plan was contingent upon that suggested fair price being paid within 30 days from Sept. 15. If that price did not obtain, then each regulatory body present and each importing company should reduce the allowables each 30 days, beginning with Oct. 15, by 10 per cent until the suggested fair price was realized.

More than 100 were present. Big companies were well represented. From Houston came William S. Farish, president of the Humble Oil & Refining Co., who was spokesman for the Standard Oil Co. of New Jersey when importers were asked to note their appearances. The New Jersey company was further represented by R. M. Young, president of the Carter Oil Co., James A. Veasey, Carter general counsel and George Lang, executive assistant.

Gulf Oil Corp. was represented by Rush Greenslade, Tulsa, vice-president of the Gypsy Oil Co. Shell interests assigned to

T. F. Lydon, St. Louis, the mission of appearing for them. The other chief importer, Pan-American Petroleum & Transport Co., was represented by A. W. Peake, vice-president of the parent Standard Oil Co. of Indiana and by Frank O. Prior, president of the Stanolind Oil & Gas Co.

Mr. Peake explained, however, that he was not authorized to discuss imports but to participate in the conference in any helpful way he could as regarded domestic conservation policies.

Mr. Hill was much interested in getting the views of the importing companies and had extended invitations to them on that basis. Mr. Lydon answered for the Shell by saying that that company was prepared to go the full distance and do its full share in carrying out whatever program the state commissioners had in mind.

Mr. Farish explained that the New Jersey company is an importer of crude oil only. The company's imports in 1931 will total about 20 million barrels, he said—about one million barrels under 1928, four million under 1929 and two million under 1930 levels. He said he believed most of the talk about imports to be overdrawn as to the effect on the market and assigned to imports about the same market role as is held by California and Texas oil. Any sound program of curtailment will treat imports in like manner to the curtailment applied to domestic production from flush and semi-flush areas.

"We must have an orderly program of production to avoid waste," said Mr. Farish. "In the past we have taken care of the excess by storing it. We no longer have the money to do that. . . . We haven't yet developed the machinery of control that will keep oil in the ground from having as bad an effect upon the market as does oil in storage. . . . One of our problems now is to get figures that are equitable."

Rush Greenslade, for the Gulf, read figures which showed the curtailment that organization has made in its imports. Its daily average imports in 1929 were 79,077 barrels; in 1930, 65,605 barrels. The average for July, 1931, was 36,000 barrels and for August, 33,000 barrels. The company made the reduction voluntarily and without agreement with anyone because it was good business, he said. The Gulf organization has always followed the policy of conservation he said, in avoiding waste and in increasing the ultimate recovery of oil from sands.

About this time Cicero I. Murray moved that a committee be appointed to draft a program, with chief reference to allotments of crude for the various states, which would tend to effect a balance between supply and consumption. This committee was named: Paul Walker, Cullen F. Thomas, Cicero I. Murray, A. W. Peake, William S. Farish, T. F. Lydon, Rush Greenslade, E. B. Reeser, Wirt Franklin, R. M. Young, William Cooley, of Bakersfield, Calif., member of the oil states committee; Van S. Welch, Artesia, N. M., also a member of that committee and Carl M. Cox, of Cheyenne, Wyoming's member of the oil states committee, and William N. Davis.

Messrs. Murray, Cooley and Thomas were appointed to drop down two floors and ask Gov. Murray to address the conference. There was a slight delay, as the governor took time out after the committee arrived to lay hands upon a newspaper man and throw him out of the office.

Eventually, the chief executive arrived. He asserted that "we have the oil business very nearly on a plan of settlement. When the fight is won, it will stay won. I don't intend ever to let it get away. When we reach a reasonable price, we will not let the floodgates down again."

The states must act in league on oil, cotton, wheat, etc., he said.

Stanolind to Increase Pipeline Capacity

CHICAGO, Sept. 14.—Additional loops on the Stanolind Pipe Line Co.'s line from Healdton, Okla., to Whiting, Ind., will be built as soon as pipe has been delivered. Orders have been given for 90 miles of 10-inch pipe and 195 miles of 12-inch pipe, amounting to about 35,000 tons.

The loops will increase the capacity of the Stanolind trunk line at Whiting from 75,000 to 90,000 barrels daily, and at junction point at Carrollton, Mo., from 80,000 to 105,000 barrels daily, and at Freeman, Mo., from 90,000 to 125,000 barrels daily.

Announcement of the pipeline construction stated that the Stanolind line, a subsidiary of the Standard Oil Co. of Indiana, had decided to increase the capacity of its own lines as negotiations to use idle capacity of other lines had arrived at no agreement.

Field New Vice-President Of Gasoline Ass'n.

TULSA, Sept. 12.—O. C. Field, president of the O. C. Field Gasoline Corp. of California, has been elected a vice-president of the Natural Gasoline Association of America, as representative from California, according to an announcement by Ray E. Miller, secretary of the association.

Mr. Field succeeds W. W. Robinson Jr., who resigned recently following his removal to the east. Mr. Field's election was made at the meeting of the Board of Directors Sept. 8.

Champlin Attacks Military Rule of Oil in Okla.

TULSA, Sept. 12.—In application to the federal court, filed at Guthrie, Okla., Sept. 11, Champlin Refining Co. makes the first court attack upon the martial law control of oil fields inaugurated by Gov. W. H. Murray.

The attack is not direct, but comes in the company's application for a rehearing of the proration suit which three federal judges, sitting en banc, decided against the Champlin company on Aug. 5. Champlin alleged in the former case that the proration orders of the state corporation commission were price-fixing measures and they now adduce the governor's "dollar oil" ultimatum as proof of their original contention.

Commission Limits East Texas Drilling To One Well for Each 20 Acres

By Paul Wagner

N. P. N. STAFF WRITER

FORT WORTH, Sept. 12 THREE developments stood out in the Texas oil situation over the week:

(1)—East Texas produced 407,124 barrels from 1822 wells, Sept. 9, under the field's reopened flow; and yielded within a few thousand barrels of that quantity subsequent days of the week. Sept. 10 production was reported by Brigadier General Wolters area at 398,910 barrels.

(2)—The Railroad Commission of Texas, the state's oil and gas conservation agency, Sept. 11, issued supplementary regulations calculated to tighten its hold on East Texas, by ruling that hereafter not more than one well may be drilled on each 20 acres in the field, except to protect vested rights and then only after a commission hearing. The order was made effective at noon Sept. 15.

(3)—Various oil organizations in Texas were welded into a single conservation program at a Dallas meeting, Sept. 10, when the Texas Oil & Gas Conservation Association was formed with Charles F. Roeser of Roeser & Pendleton, Inc., Fort Worth, as its temporary head. The new organization contemplates organizing conservationists in the Texas industry into a mammoth association aligned against anti-conservationists, regardless of major company or smaller operator affiliation.

An executive committee of the Texas Oil & Gas Conservation Association is composed of representatives of the Texas Oil Emergency Committee, formed for legislative purposes at Dallas last June; the East Texas steering committee of operators recently active in proration affairs; the North Texas Oil & Gas Association, consisting mainly of Wichita Falls district operators; the San Antonio Petroleum Club; and the East Texas Home & Landowners Association, also previously active in conservation work.

Representing the emergency group on the new association executive committee are Mr. Roeser; Warren L. Todd, president of Columbia Oil & Gas Co., Dallas; and E. L. Smith of the E. L. Smith Oil Co., Mexia.

Steering committee representatives are Jake Hamon, Jr., Longview, W. E. McKinney, Tyler independent operator; and R. L. Wheelock of Corsicana.

The North Texas association is represented by P. B. Flynn of Reno Oil & Gas Co., Wichita Falls, its former president; Merrill W. Blair and C. B. Long, both Wichita Falls operators.

East Texas home and landowners are represented by Col. J. Lewis Thompson, president of their association; Mayor J. Malcolm Crim of Kilgore and Fred Stuckey of the Longview Chamber of Commerce.

REPRESENTING the San Antonio Petroleum Club are Frank P. Zoch, president and individual operator; A. L. Buchanan and Dr. F. L. Thomson.

Eighteen temporary vice-presidents were named for various districts of Texas, including J. S. Bridwell, Wichita Falls, individual operator; F. W. Burford, president East Texas Refining Co., Dallas; Robert R. Penn, Penn Oil Co., Dallas, and S. A. Guiberson, Jr., president, the Guiberson Corp., Dallas; Col. J. Lewis Thompson, Kilgore; Jake Hamon, Jr., Longview; H. L. Hunt, Tyler; Ed Mayer, Amarillo; John M. Gholson, Ranger; Ed A. Landreth, Fort Worth; George Morgan, San Angelo; Frank P. Zoch, San Antonio; George W. Sawtelle, Kirby Petroleum Co., Houston; R. L. Wheelock, Corsicana; E. L. Smith, Mexia; Marrs McLean, Beaumont; and John F. O'Donohoe, Wichita Falls.

The Dallas meeting took no position on oil industry legislation for the present, but endorsed statements of Mr. Roeser that lines must be clearly drawn as between conservationists and anti-conservationists, without regard to size of companies or financial importance of individuals.

NORTH Texas operators later saw in the railroad commission's one well to 20 acres order, issued the following day, a step in the direction of more desirable development. Many expressed the feeling, however, that the commission would find it necessary to modify its per well production order of 225 barrels per well per day so as to reach a more equitable disposition of oil on tracts where more than one well to 20 acres had been previously drilled.

It was suggested that not only must the commission hold hearings to act on vested right exceptions where acreage plots consist of less than 20 acres but that it might also very well hold hearings on production from more than one well on 20 acres to protect equities, or rights under the old order of development, without working undue hardships under the new system.

Members of the railroad commission are quoted as opposing daily production above 400,000 barrels daily under their per well order made effective Sept. 5 pursuant to the recently enacted physical waste statute of the special oil session of the legislature.

The commission indicated it

might lower the per well allowable below the present 225 barrels daily, should additional completions carry the production level materially higher than now.

In issuing its one well to 20 acre order, the commission said: that "no lease or property shall be divided in such manner as to create more than one fractional unit and units and fractional units shall be calculated upon the basis of ownership as of the date hereof.

"New productive areas shall be divided into units and fractional units as the field may be extended. Fractional units shall be created only in case there shall be insufficient acreage in the lease or property of which the fractional unit is a part to create a full unit. Non-contiguous leases or properties shall be treated as separate tracts for the purpose of forming units and fractional units.

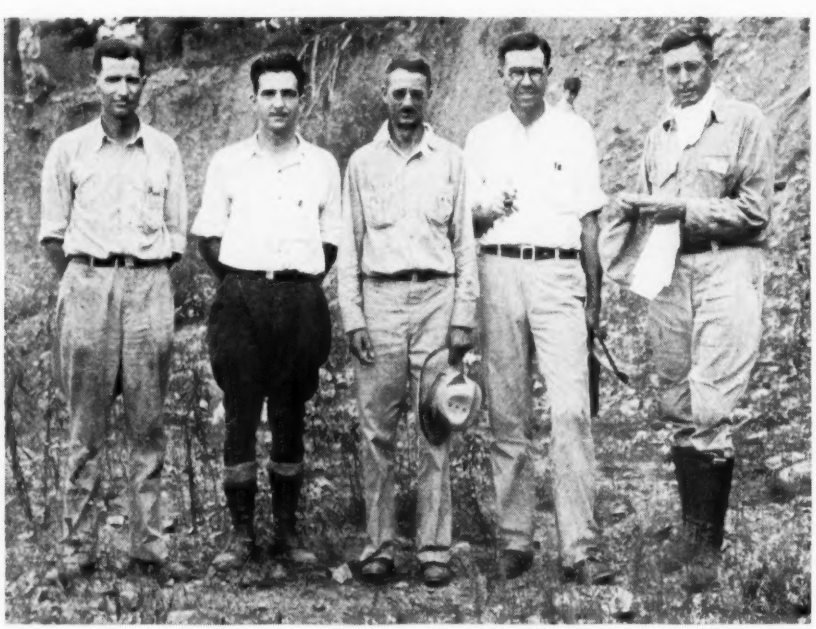
"For the purpose of the limitation of drilling described herein each fractional unit shall be considered a full unit. . . . The limitation of one well to each unit or fractional unit, as provided for herein, shall not apply to units where more than one well has already been begun or where there are offset wells already begun or completed."

Annual Conference of Geologists Covers Oklahoma Mountains

TULSA, Sept. 12

COVERING the last area in the great circle of western geology outlined for study some years ago, the Fifth Annual Conference of the Kansas Geological Society recently completed the program with a trip through the Wichita and Arbuckle mountains of Oklahoma, and the Ouachita mountains in Arkansas. Starting at Medicine Park on Aug. 30, four days were spent in the former areas and three in the latter, the trip terminating at Hot Springs, Ark., on Sept. 5.

Leaders of the conference were, George C. Branner, State geologist of Arkansas; C. E. Decker, professor of paleontology, University of Oklahoma; John Fitts, consulting geologist, Ada, Okla.; Frank Gouin, consulting geologist, Duncan, Okla.; C. W. Honess, geologist, Gypsy Oil Co., Tulsa; K. K. Landes, assistant state geologist of Kansas; Hugh D. Miser, geologist, U. S. G. S., Washington, D. C.; C. W. Tomlinson, geologist, Schermerhorn-Ardmore Co., and J. V. Howell, consulting geologist, Ponca City, Okla. Dr. Chas. N. Gould, director, Oklahoma Geological Survey, served as advisory leader.



Some of the leaders of the conference. Reading from left to right they are: Thomas Allan, district geologist, Midwest Refining Co., Russell, Kans.; E. A. Koester, Wichita, Kans.; N. W. Bass, geologist, U.S.G.S., Wichita; E. A. Wyman, district geologist, Amerada Petroleum Corp., Wichita; and John Garlough, consulting geologist, Wichita

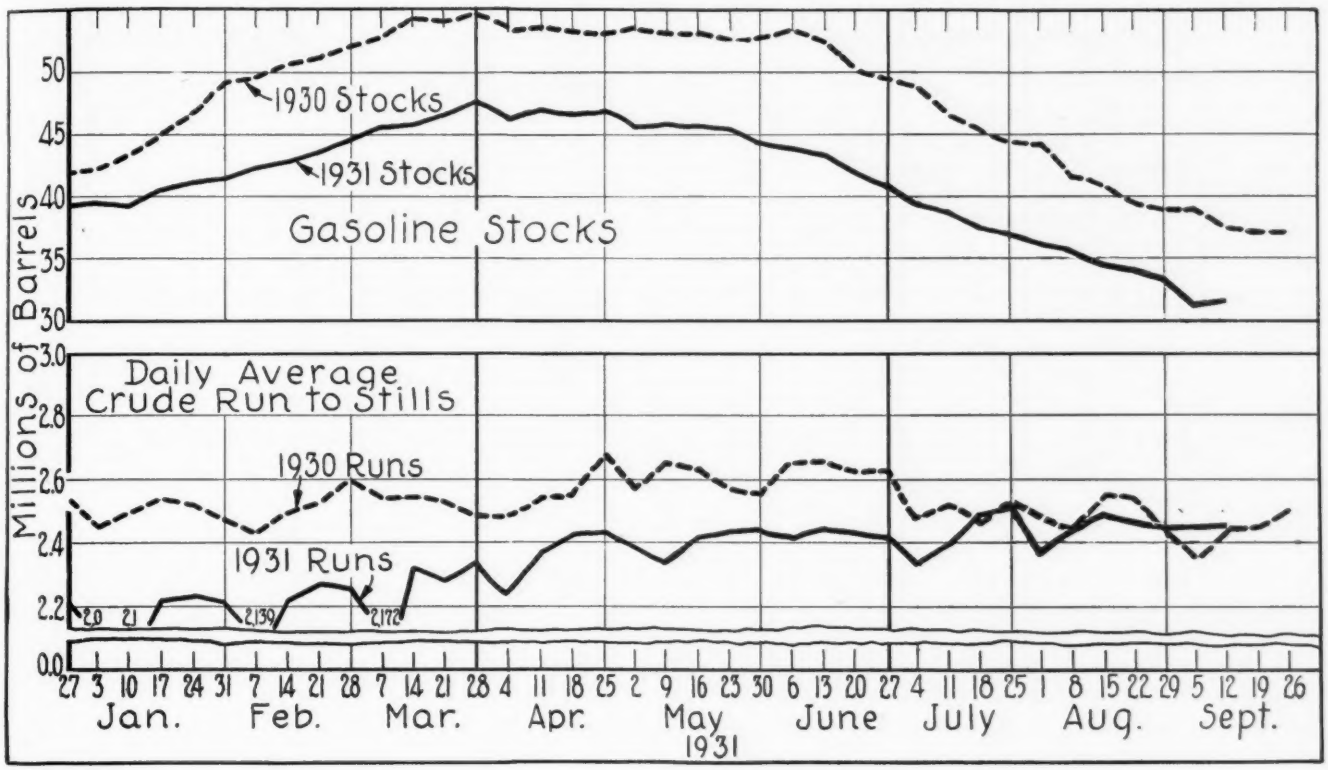
Starting the trip with Simpson outcrops on the west side of the Wichita mountains the party worked east crossing other outcrops of the same formation at Poolville and on the northwest approach to the Arbuckles. In the latter mountains the previous outcrops were compared with the type section as found there and the changes noted. Along the entire route the regional structural trends were followed and the local structures as indicated by the several oil pools were tied in with the larger folds.

In southeastern Oklahoma in the Potato Hills area, considerable time was spent in studying the great thrust faults of the region and the complicated geology that resulted from the huge disturbances which caused them. Round Prairie, considered to be a fenster in the great Winding Stair fault, is also located in the neighborhood and a detailed study of its history and geology was given by Hugh D. Miser.

One of the outstanding features of the conference was the presentation of a geologic cross-section of central United States, a compliation of correlation data representing the combined efforts of leading geologists throughout the area. The cross-section extends from the Lake Superior highland of Michigan in a southwesterly direction beyond the Marathon district of southwestern Texas. It was constructed entirely from the use of well logs excepting in the extreme southwestern portion which was built up from sections measured on the surface.

The horizontal scale of the section is an inch to 20 miles and its vertical scale is an inch to 400 feet. The resultant vertical exaggeration is 264 times. The total length is 1960 miles which is distributed as follows: Michigan and Wisconsin, 526 miles, Iowa, 295 miles, Missouri, 100 miles, Kansas, 245 miles, Oklahoma, 236 miles, and Texas, 558 miles.

U. S. Crude Runs and Gasoline Stocks as Reported Weekly by A. P. I.



Refinery Gasoline Stocks Increase 634,000 Barrels

By Telegraph

NEW YORK, Sept. 15

STOCKS of gasoline at refineries reporting to the American Petroleum Institute were increased 634,000 barrels in the week ended Sept. 12 when orders failed to build up after the Labor Day holidays. Total refinery stocks Sept. 12 were 31,818,000 barrels. The increase was the first since early in the consuming season.

Stocks of gasoline at bulk terminals and in transit to these terminals east of California were reduced 717,000 barrels during the week. As a result stocks of finished gasoline not yet in the distributing division were 83,000 barrels lower on Sept. 12 than on Sept. 5. All of the reduction was in gasoline in transit indicating that new orders were on a lower level than in the previous week.

Refinery gasoline stocks rose most sharply in inland refining centers and on the Pacific Coast. California stocks increased 350,000 barrels. Indiana-Illinois refinery stocks rose 316,000 barrels and Oklahoma-Kansas stocks increased 233,000 bbls.

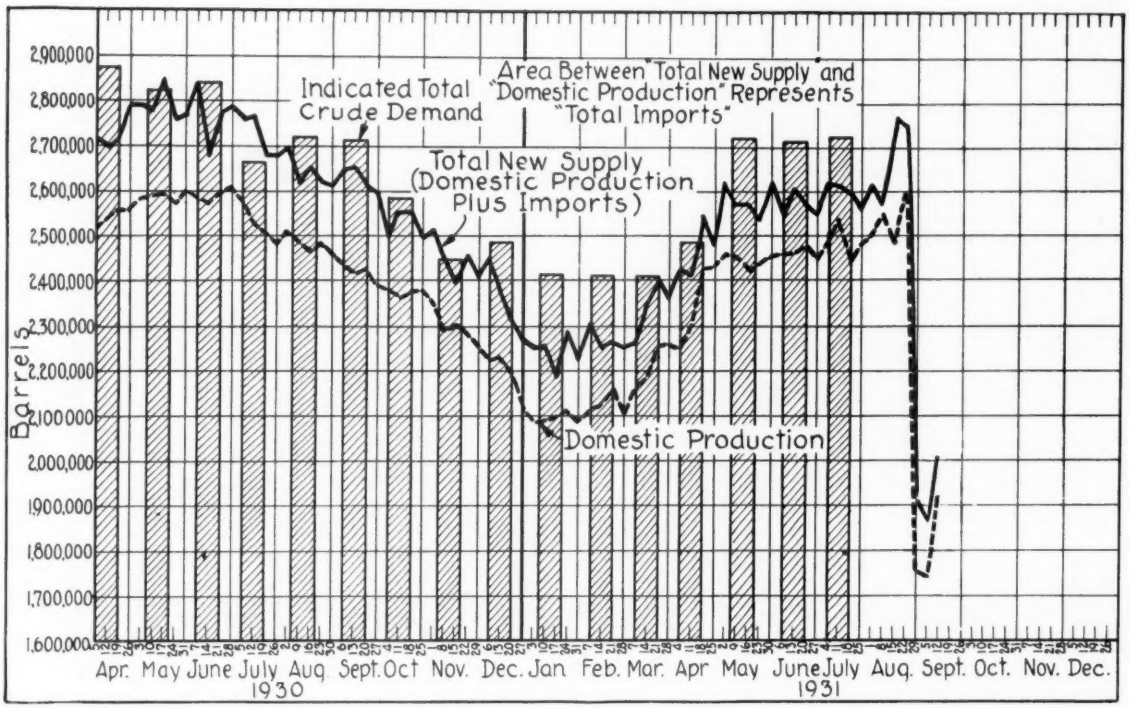
East Coast and Gulf stocks were lowered substantially during the week. East Coast refineries drew 209,000 barrels from storage and Gulf Texas stocks were cut 166,000 barrels.

Cracked gasoline production averaged 509,000 barrels per day during the week. This is the largest since the institute has been reporting on cracked gasolines. The increase over the week ended Sept. 5 was 27,000 barrels daily average.

Current Refinery Operations

Districts	Per Cent Capacity Reporting	Daily Average Crude to Stills (Barrels) Week Ended		Per Cent of Reporting Capacity Operated Week Ended		Stocks (Thousands of Barrels) Gasoline		Gas & Fuel Oil		Cracked % of Total Capacity Reporting	Gasoline Production Daily Av. Production (Barrels) Week Ended	
		Sept. 12	Sept. 5	Sept. 12	Sept. 5	Sept. 12	Sept. 5	Sept. 12	Sept. 5	Sept. 12	Sept. 12	Sept. 5
East Coast	100.0	457,000	457,200	72.1	72.1	4,253	4,462	10,625	10,937	90.4	95,000	94,400
Appalachian	91.8	111,900	100,700	81.4	73.3	1,244	1,171	1,525	1,472	96.1	25,700	26,400
Ind., Ill., Ky.	98.9	360,100	350,400	83.5	81.2	3,956	3,640	4,716	4,570	95.5	98,700	94,300
Okla., Kans., Mo.	89.6	304,100	287,000	69.9	65.9	2,672	2,439	5,191	5,060	92.3	60,900	66,200
Texas	91.3	534,600	554,600	69.8	72.5	5,457	5,597	12,043	11,790	96.8	129,900	107,700
La., Ark.	98.9	168,300	173,900	73.0	75.4	803	741	3,226	3,154	100.0	38,400	34,600
Rocky Mountain	89.3	49,200	45,400	34.6	31.9	1,215	1,266	804	809	98.5	13,700	15,300
California	96.5	474,700	487,100	53.9	55.3	12,218	11,868	97,244	97,538	100.0	46,700	43,400
Total	95.0	2,459,900	2,456,300	67.3	67.2	31,818	31,184	135,374	135,330	95.6	509,000	482,300
Texas (Gulf Coast)	99.8	390,600	423,000	73.5	79.6	4,295	4,461	8,522	8,337	98.6	103,600	79,900
La. (Gulf Coast)	100.0	111,900	115,400	75.9	78.2	594	574	2,211	2,119	100.0	30,400	27,300

Review of Late Production News



This chart shows crude oil supply according to the American Petroleum Institute reports (solid line) in relation to indicated crude oil demand as taken from the Bureau of Mines monthly reports (shaded columns).

California

WITH Petroleum Securities Co.'s Burbank 1, Sec. 30, 23-19, middle dome of the Kettleman Hills, coring ahead in the Temblor formation below 7920 feet, California operators are carefully watching daily progress reports.

Field reports indicate the cores show alternate layers of brown shale and hard sand with the latter giving faint acetone cuts. Gas pressure was also reported good and the forthcoming production test will be watched with considerable interest.

Standard of California completed its No. 41-3P, Sec. 3, 22-17, north dome of the Kettleman Hills, late in the week for an estimated initial production of 6480 barrels of oil and 58 million cubic feet of gas from a depth of 7926 feet.

Production at Long Beach was boosted the past week when the Ring Oil Co. completed its Zenith No. 3 at 8060 feet for an initial production estimated at 1500 to 2000 barrels daily. This project is located in the Los Cerritos district and is bottomed in a deep sand discovered by the Richlin Oil Co. several weeks ago.

Oklahoma, Kansas

OKLAHOMA fields, still tightly held under martial rule, show no change in production from week to week. Production of the entire state averaged 256,400 barrels during the past week, about 144,000 barrels less than East Texas alone.

A preliminary conference at Oklahoma City looking toward allotment of production to the various states on a more equitable basis and a limitation of imports to balance supply and demand occupied much of the interest of southwestern producers during the week.

Daily Average Production, Important Districts, American Petroleum Institute Figures
(By Telegraph)

	Week Ended Sept. 12 Barrels	Sept. 5 Barrels
Okla. City	7,550	9,300
Oklahoma	256,400	256,600
East Texas*	171,500	Shutdown
Total Texas	754,300	588,550
California	510,300	503,200
East of Rockies	1,408,700	1,243,100
Total U. S.	1,919,000	1,746,300

*Week ended Sept. 9.

Texas, New Mexico, Louisiana

THE railroad commission, as the state's oil and gas conservation agency, amended its oil proration order on East Texas, effective Sept. 15, to limit drilling of more than one well to 20 acres, except to protect vested rights in smaller tracts.

Production has hovered around the 400,000 barrels daily mark since the field was reopened. Completion of additional wells will increase the daily production unless the commission modifies its order or decreases the per well allowable.

The commission has called hearing for Sept. 23 at Austin for an investigation of pipeline rates, as authorized by the recently enacted common purchaser law.

Steam Topping Plant Solves Crude Disposal Problem

By Lawrence E. Smith
N. P. N. STAFF WRITER

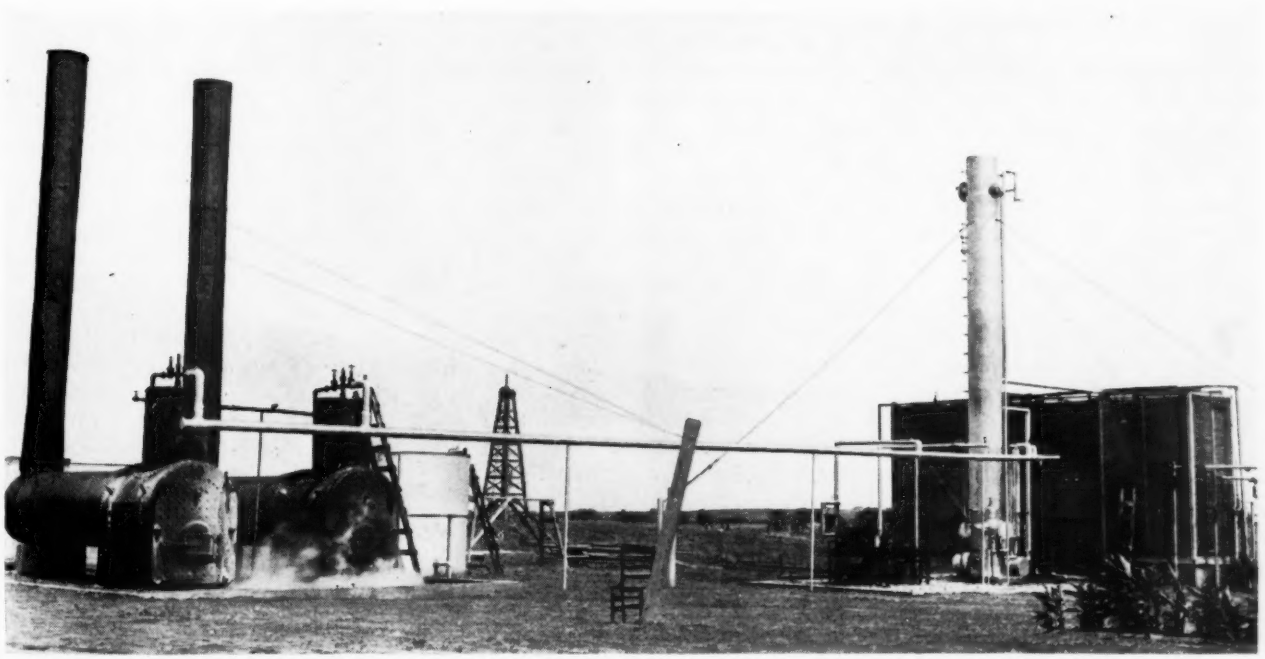
COVINGTON, Okla. A REFINERY which, exclusive of tanks, occupies but a few square yards of ground, has been completed and put into operation by Charles E. Knox, of Enid, Okla. Mr. Knox, who owns production in the Covington field, south of the larger Garber pool, has operated a small gasoline plant two miles northeast of Covington for several years and the small refinery is operated in conjunction with the other plant.

The low crude oil prices of this year brought the question of refinery construction to the minds of many operators. While not many have been built, the interest was high for a time. Generally, the proposals to engineering and equipment companies were for plants ranging in throughput from 50 to 1000 barrels daily, with the majority setting 250 to 300 barrels as the upper limit. They were to be topping plants that would produce a motor fuel overhead and fuel oil bottoms. Sometimes they proposed to take a side cut of kerosine. A few "home-made" plants were put in; some promptly demonstrated the folly of cheap construction by "blowing up" and injuring the operator.

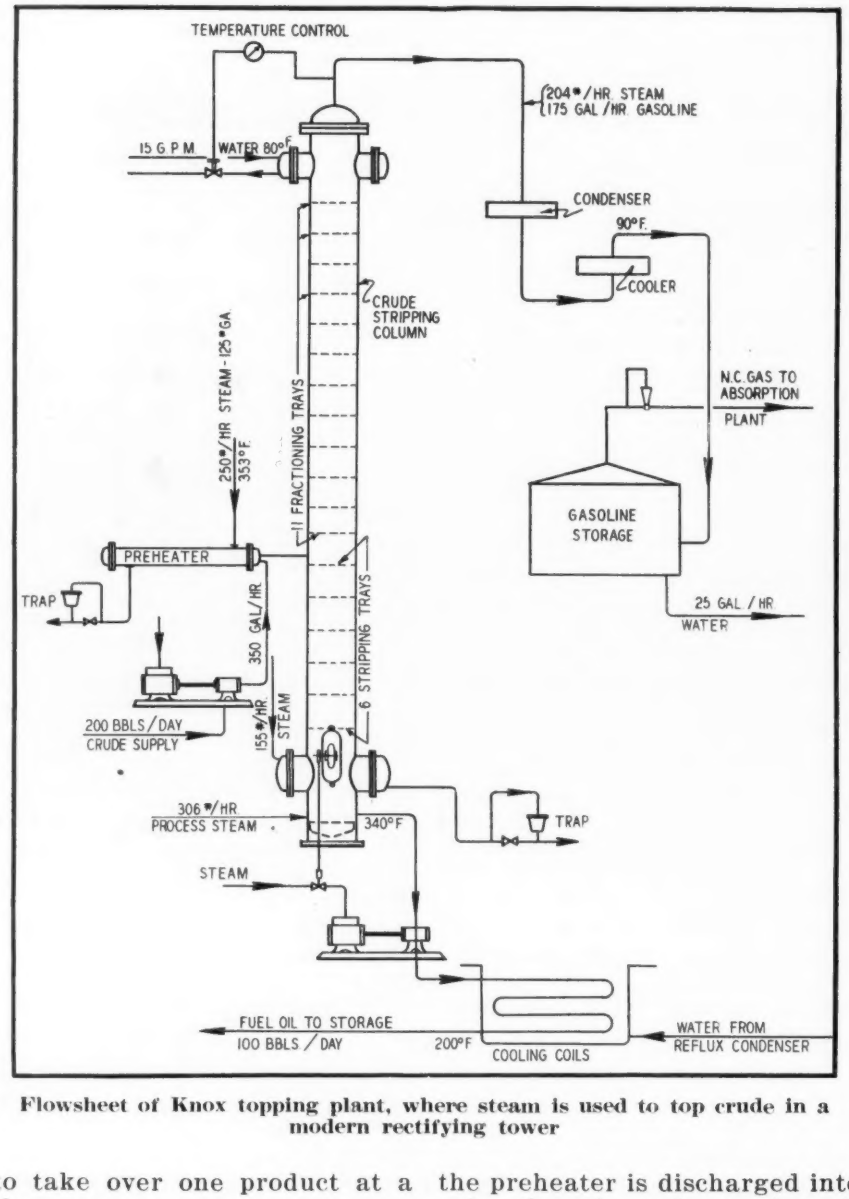
Mr. Knox's problem was somewhat different from those of the majority of producers who thought they would improve their situation by refining their own crude. He had built up a local jobbing trade, selling the blended output of his gasoline plant to local retailers, and his refinery plans fitted into this situation. He consulted with Petroleum Engineering, Inc., of Tulsa, on design and as a result has erected a plant to operate in accordance with the accompanying flow diagram.

As the crude oil produced in the district is "sweet" and needs no chemical treatment, the operation was simple and simplicity of design was incorporated into the equipment. The one man who was running the gasoline plant runs the refinery also. When extra help is required for any purpose, the producing department on the Knox leases supplies it.

The design of the plant was based on a normal throughput of 200 barrels per 24 hours of 48° A. P. I. crude oil from which as high as 65 per cent may be taken overhead as a cut to be later fractionated into kerosine and gasoline. Should the future show the advisability of making these two cuts, a second fractionating column may be installed to make the separation. As it stands, the plant is designed for continuous operation



Topping plant of Chas. E. Knox, Covington, Okla., operated in conjunction with natural gasoline plant, for producing naphtha which is blended to a finished motor fuel with the natural gasoline produced on the lease



Flowsheet of Knox topping plant, where steam is used to top crude in a modern rectifying tower

to take over one product at a time.

Because of steadiness of operation and ease of control, the steam distillation type of still was decided upon and, since the steam requirements are small, the boiler plant installation was neither elaborate nor expensive. It consists merely of two oil field boilers, one a stand-by.

Crude oil is discharged first into a steam preheater where it is heated to the maximum temperature practicable with the steam available. The capacity of this preheater may be increased by increasing the steam pressure at the boilers, as well as the capacity of the distillation unit as a whole, since this increases the temperature of the steam and allows higher heat transfer through the heating surface provided.

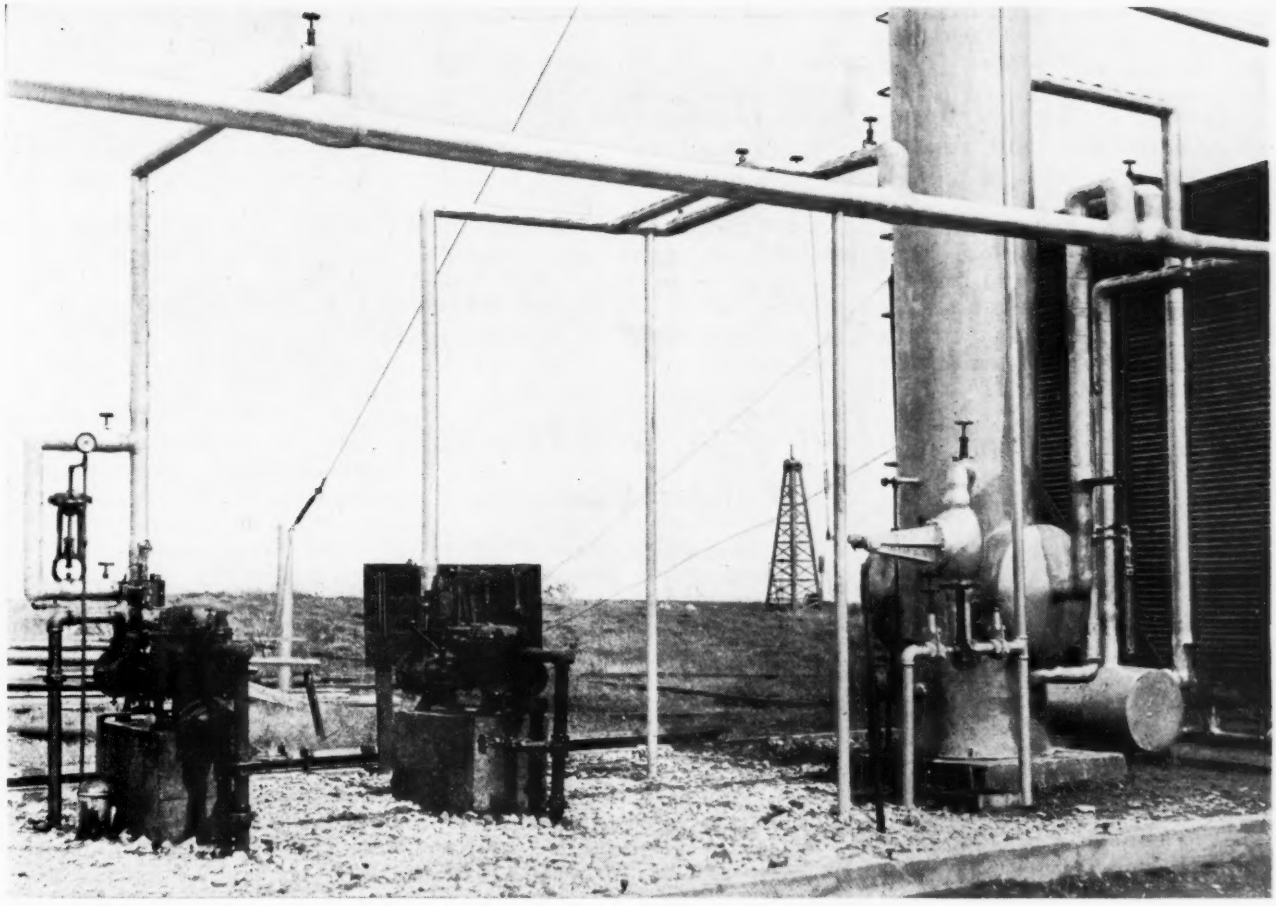
From the preheater the hot oil with the vapors formed in the preheater is discharged into a fractionating column where it passes downward over six stripping trays equipped with cast iron bubble caps. The crude oil passes downward from tray to tray, meeting and being mixed and scrubbed by an ascending stream of steam and oil vapor which completely strip the oil of the gasoline fractions which are desired as a product. The mixture of steam and vapors pass upward through the column, meeting a descending flow of reflux which consists of the heavier fractions that are not desired in the overhead product.

The quantity and quality of this reflux are governed by a reflux condenser through which all vapors must pass before leaving the top of the fractionating column, the temperature of which is automatically controlled by a temperature controller regulating the water flow through the reflux condenser. This temperature controller is set to hold a top temperature which will permit gasoline of the end point desired to issue through it and out of the fractionating column. All other products are condensed and pass downward through the column as reflux. To condense the overhead stream a Griscom-Russell Bentube section was placed in the cooling tower and another small section was used as a final cooler of the gasoline before running to storage tanks.

In distilling a crude oil a certain amount of uncondensable hydrocarbons are released and in this case a small vacuum line was run to the top of the gasoline storage tank with a regulator which permitted these vapors to be removed and discharged by compressors into the absorption plant, thus assuring the highest economy in the distillation process.

The crude oil which has been stripped of its gasoline content settles in the bottom of the oil where a reboiler section assisted by steam agitation performs a final separation of any light fractions which may not have been released in the stripping trays. The hot oil is then discharged by a liquid level controller which governs the steam to the small hot oil pump that pumps the residue through a cooler to storage as a finished fuel oil.

Principal features of this plant are simplicity of construction and operation. Assuming a steady steam supply, it could easily be permitted to operate without attention except an hourly or even less frequent visit from an attendant. It has been equipped with sufficient controls, of the type that are standard in all modern plants, to make it practically automatic and self-regulating. The plant has been in operation, as this is written, for a little more than two weeks and, according to the man who has charge, has performed in manner that is entirely satisfactory. It is currently producing about 2000 gallons of gasoline daily, recovery averaging a little more than 49 per cent. Thus, it is operating at roughly half capacity. The product is blended with the out-



Control instruments, etc., which enable one man to operate the plant as well as the natural gasoline plant nearby

put of the gasoline plant at the same location as the refinery.

Because of the interest in small refineries and the general lack of information possessed by the men who have displayed the interest, Petroleum Engineering, Inc., recently prepared the following brief description of distillation units for small topping plants:

In general it may be said that small topping plants can use one of three methods of distilling crude oil:

Straight Steam Distillation

By this method, we refer to the process by which crude oil is heated in heat exchangers and steam preheaters to as high a temperature as the steam pressure available will permit. The hot oil is then discharged into a fractionating column where it passes downward over bubble trays and meets an ascending column of steam which strips it of the gasoline or kerosine content. The mixed vapor and steam then passes through fractionating traps above the feed plate where it is met by a descending reflux which washes out of the vapor the heavy products which are not desired in the overhead or refined product.

Salient features of this process are:

A—Lack of direct fired heaters, and therefore less fire hazard.

B—Easy regulation, due to the uniformity of temperature which may be maintained.

C—A large size of column required, due to the volume of steam to be passed by the column and operation at atmospheric pressure.

D—Large size of final condenser necessary to condense the steam and vapor mixture.

It may be said that this type of plant may be recommended where good water and cheap fuel are available for steam production and condensing purposes.

Shell Stills

For either batch or continuous distillation in a small plant a shell still may be used for heating the oil. Shell stills or-ordinarily have a capacity of 6 cubic feet per barrel of oil of daily capacity. For example, a still that is rated at 100 barrels per day will have approximately 600 cubic feet of internal volume and be of the approximate dimensions of 7 feet in diameter by 15 feet long.

When operating these stills on the batch process, they are filled with oil to the amount of one batch and the oil is then slowly brought up to the temperature which will vaporize the lightest fraction. The heating is continued until the endpoint of the first fraction is reached, which is the endpoint of the gasoline required as the refined product. If kerosine is desired, higher temperatures are necessary to the remainder of the crude oil, and steam is injected into the oil through perforated pipes in the bottom of the still. The combination of steam and higher temperature vaporizes the kerosine content of the crude oil which also passes through the condenser for recovery as the kerosine product.

The modern method of using a shell still is to have it discharge its vapor and steam mixture into the bottom of a bubble

tower which is provided with an overhead cooling coil to condense the heavier ends of the vapor which then return down through the column as reflux to be re-vaporized by the ascending hot vapors from the still. Such a setup may be used for continuous distillation and the bubble tower may be made high enough to permit a side stream of kerosine to be taken off with a bottom stream of gas oil from the column. The residue drawn from the shell still will be fuel oil.

Salient features of the shell still are:

A—Ease of construction of the furnace.

B—Simplicity of construction and operation.

C—Mobility of the equipment.

D—Danger of overheating due to poor heat transfer, which requires steam agitation of the oil in the still.

E—Difficulty of making close cuts, unless a bubble tower is added to the unit.

Pipe Stills

Where efficiency and economy in heating the oil for a continuous distillation process are desired, the pipe still gives the best results. The so-called pipe still, which is really a tubular heater, consists of a coil of pipe set within a furnace. The oil is pumped through this pipe coil where it attains the temperature necessary to remove the fractions desired. In case of a gasoline cut only, this temperature may not exceed 400° F.; but in case of several cuts, such as gasoline, kerosine and gas oil being desired, a temperature from 650° to 700° must be attained before the oil is discharged into the column.

To facilitate estimates for distillation equipment a brief questionnaire is attached which will enable the sales engineer to present his problem to the estimator. The questionnaire by no means covers every detail of every case and cannot be a substitute for keen interest of the salesman and earnest study of each problem that is presented.

Salient feaures of the pipe still are:

A—Efficiency of heat transfer and furnace performance.

B—High pumping charges due to friction losses in the pipe coil.

C—Lack of mobility of the equipment, should a change in location be necessary.

D—Danger of overheating and burning out tubes due to careless firing.

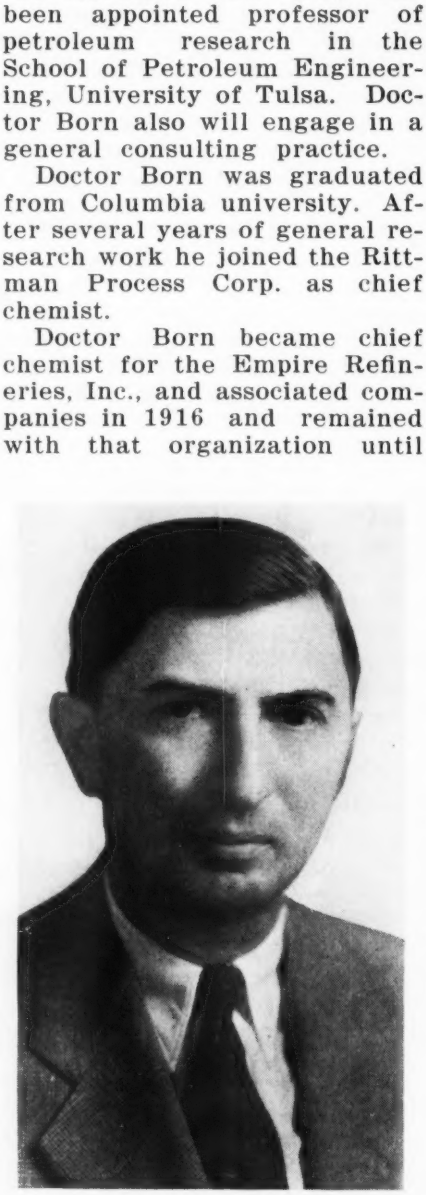
E—Fractionation of several products by one passage through the furnace, in which sufficient heat is added to the crude oil to accomplish complete fractionation.

Dr. Born Joins Faculty Of Tulsa University

TULSA, Sept. 12.—Dr. Sidney Born, who resigned Sept. 1 as assistant general superintendent of refineries for the Marathon Oil Co., has been appointed professor of petroleum research in the School of Petroleum Engineering, University of Tulsa. Doctor Born also will engage in a general consulting practice.

Doctor Born was graduated from Columbia university. After several years of general research work he joined the Rittman Process Corp. as chief chemist.

Doctor Born became chief chemist for the Empire Refineries, Inc., and associated companies in 1916 and remained with that organization until 1920, when he joined the Transcontinental Oil Co. as assistant general superintendent of refineries. He remained with that company after it was bought by the Ohio Oil Co. in 1930 and its name changed to Marathon Oil Co.



Dr. Sidney Born

During the war Doctor Born was appointed consulting engineer for the Bureau of Mines and assisted in the design of furnaces used to produce war materials. Doctor Born also is the inventor of several cracking process operations, and holds numerous patents on the synthesis of alcohol and various organic compounds from petroleum.

To Keep Raymond Pool Shut In

WICHITA, Kans., Sept. 12.—At conclusion of a hearing held by the Public Service Commission of Kansas Sept. 9, it was announced the Raymond pool of Rice county would be kept shut in for indefinite time. The following day landowners petitioned the commission to hold a hearing in Lyons, principal town near the pool, to reconsider the order. They want to see production opened to at least 200 barrels per well.

Fuel Committee Approves Knock Test Engine

By Telegraph

NEW YORK, Sept. 14.—The Co-operative Fuel Research Steering Committee, Sept. 14, approved the recent report of its sub-committee on detonation by adopting the proposed tentative standard test engine and carburetor.

The proposed standards will be placed before the American Petroleum Institute and the Society of Automotive Engineers at their next meetings for approval.

The test engine which was approved is the one which was developed in co-operation with the Waukesha Motor Co. and has been under study by the committee for more than two years. Tentative standard procedure in using this equipment for antiknock testing was published in the Aug. 4 issue of NATIONAL PETROLEUM NEWS, beginning on page 54.

State Gas Tax Officials to Study Means of Curbing Evasions

By Roger B. Stafford
N. P. N. STAFF WRITER

DENVER, Colo., Sept. 11 NINETY per cent of gasoline tax evasions can be eliminated if the reputable oil companies will cooperate with state officials in their efforts to frustrate evasions, said James Duce, state oil inspector of Colorado, after he has been elected president of the North American Gasoline Tax Conference here this week.

Gasoline tax evasion, and avoidance are recognized by tax collection officials as practices which have been made attractive with the almost biennial rate increases by most states.

The subject received more attention from the conference than any other.

A special committee was appointed to act during the ensuing year as a clearing house for the dissemination of ways and means to curb tax evasion and to cooperate with 12 regional groups of the conference in developing means to minimize evasions.

W. S. Booton, Nashville, director of the excise division of the Tennessee Commission of Finance and Taxation, is chairman of this committee.

Other members are: C. F. Joyner, Jr., Richmond, assistant director of the Virginia tax collection division; Frank J. Ryan, New York, deputy commissioner of the New York motor fuel tax bureau; J. T. Dortsch, New York, attorney for The Texas Co.; F. G. Driscoll, New York, tax attorney for the Sinclair Refining Co.; Harry Biegeman, Jr., Philadelphia, tax accountant for the Sun Oil Co., and R. B. Stafford, Cleveland, NATIONAL PETROLEUM NEWS, secretary of the committee.

Evasion troubles and collection of delinquent taxes were presented to the conference by Frank M. Clark, special deputy oil inspector of Kansas. The troubles of numerous states were presented in a discussion by Benjamin Eynon, deputy secretary of revenue and commissioner of motor vehicles of Pennsylvania.

Kansas' troubles were due in part to deficiencies in the tax law, Mr. Clark said. An early law provided for the reporting of gasoline imported or sold but did not require sending in a check with the report. One Kansas City marketer reported less gasoline than he was receiving and was paying the tax on only the part he reported. This marketer was forced to pay $13,800 in one lump when the inspectors caught up with him.

Mr. Clark said exemptions were troublesome. Exemptions in the state, he said, were out of proportion to the number of tractors and combines operated. Exemptions were also claimed by truckers of gasoline from refineries on the ground that the gasoline was to be delivered in another state. Most of this gasoline was delivered to Kansas marketing points, he said. The practice became profitable. In a check-up one woman was found to have been hauling gasoline from a Wichita refinery, presumably into Nebraska but really to Kansas points between Wichita and the Nebraska border.

E. D. Graham said a large part of the evasion troubles in Oklahoma was due to lack of co-operation between departments of some oil companies. He said evaders would buy natural, or drip, gasoline from the production departments of companies and kerosine and naphtha from the sales departments, blend the two and sell the blend for motor fuel. The sales departments would make the proper reports to the state on all gasoline those departments sold but the production departments did not report the natural gasoline sales or pay the tax. He said that if all companies would get co-operation between their departments that three-fourths of the evasion in Oklahoma could be eliminated.

Mr. Eynon said the major companies had fully co-operated with Pennsylvania state tax officials to stamp out evasion in his state which under the law that obtained until a few months ago, was tremendous. Under the old law Pennsylvania had 23,000 tax accounts, the tax being collected from retail dealers. Under the new law the number of units from which tax is collected by the state is approximately 600.

Pennsylvania maintains the most elaborate tax collection

Conference Favors Lower Gas Tax

DENVER, Sept. 11.—Gasoline tax rates should not be further increased but should be gradually reduced, was the substance of a resolution adopted this week by the North American Gasoline Tax Conference, made up mostly of tax collectors and gasoline and kerosine inspectors of more than half the states of the United States.

The resolution also stated as a principle that gasoline tax receipts should be used only for highway and bridge construction and maintenance and not diverted by states for other purposes except to pay interest and principal on highway and bridge bonds.

It was recommended in the resolution that no gasoline tax money should be paid to any political subdivision of a state until it had accounted for all moneys previously received for highway and bridge construction and upkeep.

machinery in the United States. It has 200 inspectors checking gasoline for taxes. It also has 40 highway patrolmen engaged in preventing illegal running. It also has a marine patrol of 16 men on the Delaware and Schuylkill rivers around Philadelphia and may soon institute a marine patrol on the Ohio and Monongehela rivers in western Pennsylvania.

The Pennsylvania highway patrol watches all roads in and cut of the state for tank trucks, stops all trucks and inspects all bills of lading, shipping bills or other documents drivers are supposed to carry if they are engaging in inter-state hauling.

Pennsylvania has collected more than $500,000 in taxes that were evaded under its old law and is proceeding with collection of additional back taxes as fast as evasions can be run down. It is estimated that Pennsylvania has lost around $5,000,000 through evasions the last few years.

How Pennsylvania is operating this force of inspectors and highway and marine patrolmen was explained by Clyde E. Smith, Mr. Eynon's office director.

Charles R. Maybury, director of licenses of the state of Washington, said tanker shipments were causing his state some trouble. Trucking of gasoline into Washington from Oregon in efforts to evade the Washington tax has been virtually ended by a patrol system installed on an inter-state bridge, he said. The state is making a drive against farmers and dry cleaners who are making illegal claims for refunds, he said.

A highway patrol is being used now by Tennessee to check inter-state running of gasoline as a means of evading taxation, said F. V. Kuhn, Nashville, supervisor of the Tennessee gasoline tax unit.

Virginia is checking gasoline peddlers who buy from bulk plants in Virginia presumably for delivery of loads in Maryland and the District of Columbia. Much of this gasoline is being resold in Virginia without payment of taxes, Mr. Joyner said.

Cut rate dealers in St. Louis have resorted to insolvency pleas to evade the taxes, Carl J. Otto, assistant attorney general of Missouri, said. Cut rate dealers would rent outlets, Mr. Otto said, and buy gasoline without paying the tax. The state, under the Missouri law, could not force collection of the taxes for 60 to 75 days. Then the dealers would plead insolvency. Such operations were usually in rings, another member of the ring taking over a station whenever one member became "insolvent."

Henry A. Perriguey, Missouri inspector of oils, said the oil companies operating in that state were a "pretty good bunch." He said there was virtually no trouble with the legitimate companies.

DeWitt Billman, secretary of the legislative bureau, and Walter W. Miller, chief oil inspector, of Illinois, said the trouble in their state had been the inadequacy of the gasoline tax law. Both said there was little trouble, they believed, since an amendatory measure became effective recently.

Refund claims indicated there was evasion among farmers in Indiana and South Dakota, according to Floyd Williamson, state auditor of Indiana, and Miss Elsie A. Friesman, motor fuel refund clerk of South Dakota.

HIGH gasoline taxes are an invitation to evade taxes, wrote E. B. Swanson, petroleum economist of the U. S. Bureau of Mines, in a paper read by H. P. Rue, supervising engineer of the Bureau of Mines at Laramie, Wyo. An analysis of refunds would probably help in ascertaining the extent of evasions, Mr. Swanson said.

J. H. Hill, Tulsa, attorney for The Texas Co., in concluding an address on gasoline taxes from the viewpoint of the oil industry, enjoined the collectors and inspectors as follows:

"Preach the doctrine of gasoline tax enforcement to your state officers, to the members of your legislatures, and to the public generally. Say to them that you can conceive of no greater injustice than a state licensing one to collect taxes and then permitting him to embezzle money so extorted from its citizens; that government can only survive if it is good and just; that failure to enforce this tax works the greatest injustice on the law abiding; that tax evasion imperils the state's revenue; that it encourages crime and rewards the criminal; that thereby it strikes the very foundation of the state; that in justice to the law abiding the gasoline tax must be either enforced or repealed."

James Duce is Elected Head of Tax Group

DENVER, Colo., Sept. 11.—James Duce, veteran oil inspector of Colorado, was elected president of the North American Gasoline Tax Conference at its sixth annual convention here. Mr. Duce is widely known in the marketing division of the oil industry.

Benjamin Eynon, deputy secretary of revenue and commissioner of motor vehicles of Pennsylvania, was elected vice-president-at-large. Twelve regional vice presidents also were elected.

E. D. Graham, chemist with Oklahoma Corporation Commission, was re-elected secretary. The conference's treasurer is J. C. Colton, supervisor of refunds for Illinois.

The regional vice presidents who will preside over meetings of gasoline tax administrators, inspectors and oil company representatives that will co-operate with state tax officials in administering the tax, are:

Henry F. Long, Massachusetts, New England group.

Frank J. Ryan, New York, Eastern group.

C. F. Joyner, Jr., Virginia, Middle Atlantic group.

W. G. Query, South Carolina, South Atlantic group.

Carl C. White, Mississippi, Middle Gulf group.

Floyd Williamson, Indiana, East Central group.

Henry R. Chase, Minnesota, West Central group.

Seth G. Wells, Kansas, Middle Western group.

H. V. Bird, Oklahoma, Southwestern group.

Adolph P. Hill, New Mexico, South Rocky Mountain group.

T. F. Coombs, Utah, North Rocky Mountain group.

Charles R. Maybury, Washington, Pacific Coast group.

Model Inspection Regulation Aims To Check Gas Tax Evasion

A DENVER, Colo., Sept. 11 TENTATIVE model statute regulating the shipment, possession, sale, and use of motor fuel, kerosine and lubricating oil, submitted to the sixth annual meeting of the North American Gasoline Tax Conference here this week, was referred to a committee for further consideration after the model bill has been indorsed in principle.

The bill provides for the classification of motor fuels into two general groups. One group, to be known as Grade A, conforms to U. S. Motor specifications in general. The sulfur specification was omitted from the specifications in the bill because sulfur content of gasoline is being debated in the petroleum industry.

The second grade includes all motor fuels that fall below U. S. Motor specifications. It is to be known as Grade B motor fuel but in the draft submitted to the conference there was a requirement that this grade when offered for sale should be labelled "Inferior Gasoline."

This suggested requirement caused considerable argument because some members of the conference believed such a label would be unfair to the oil industry on the ground that the fuel might not be an inferior product but suitable for the purpose for which it would be offered for sale.

In spite of the opposition the designation "inferior" was left in the tentative draft but may be changed to remove the stigma that is attached to the word before the model bill is submitted for final adoption by the conference at its annual meeting in Philadelphia next fall.

Kerosine specifications are the same as those of the U. S. Specifications Board. No specifications were included for motor oils and the testing is primarily intended to prevent substitution of non-branded oils for branded oils.

A. S. T. M. testing methods are to be standard for determining the specifications of gasoline and kerosine.

The bill provides that no products shall be sold or offered for sale at retail that have not been inspected. Shippers of gasoline or kerosine are required to report to the proper authorities in the state in which the consignee has his business a description of the goods and the volume. In cases where a shipment is diverted while in transit, the state authorities shall be notified of the diversion.

Samples of each shipment shall also be supplied the state authorities. These samples are to be checked against samples taken from the shipments on their arrival at destinations and also against samples which may be collected from inspectors at retail outlets.

This inspection differs in theory from that which grew up when kerosine was the principal petroleum product. Today's inspection is intended to aid motor fuel tax collectors in preventing tax evasion by blending kerosine and other relatively heavy products with natural or other light gasoline in an effort to escape taxation for part of the motor fuel. In the first 50 years of the industry inspection was a safety measure.

THE suggested bill provides for the taking of samples either inside or outside the state in which the products are to be offered for sale. It also stipulates that a complete analysis shall not be made unless the state officers deem a complete analysis is necessary.

Commingling of uninspected products with inspected goods makes the total volume of goods subject to inspection under another section of the draft. Use, sale, or offering for sale is prohibited until such commingled products are inspected.

Carriers are required to report all shipments to state authorities and to permit inspection of shipping records on demand of the state. This is to provide an additional check against motor fuel tax evasion.

Misbranding is prohibited and the defacement of any mark designating a brand name, for the purpose of offering some other brand or product than the product specified on the container, would be a violation of the statute.

Inspection fees are to be paid by the fifteenth of the month following the month in which the inspection was made. If not paid by that time a 10 per cent penalty is to be added and the amount due together with the penalty shall bear interest at 1 per cent per month during delinquency.

DURING delinquency no inspections are to be made for the delinquent. This latter provision would practically prohibit the delinquent from continuing in business.

The draft provides for fine of $100 to $1000 or imprisonment for not more than one year or both for violation of any of the sections of the bill.

Amount of inspection fees was not stipulated as this would be left to the various states. It was the opinion of many at the conference that fees should be sufficient only to cover costs of inspection.

Inspection should not be a revenue producing function of the state, it was generally expressed. Inspection as a revenue producer has been held unconstitutional in at least one U. S. Supreme Court decision although inspection laws in some states, Indiana for example, are used to produce revenue.

Many states do not have inspection now and adoption of this model bill by the conference a year hence will not mean that states will follow the suggestion.

Mr. Ellick Botts, Consulting Pumper,
R. F. D. No. 5,
Gray Horse, Okla.
Dear Mr. Botts:

No doubt you realize that the present conditions make for a new policy in the oil industry. We have been thinking it over here in the office and we feel that if you have any ideas as to what the future holds, you owe it to the oil men to indicate what they may expect. Don't strain yourself any, but give us any prediction you may have handy.

National Petroleum News.
Dear Editor:

Your communication just received and by strange coincidence it arrives at a time when I have been doing some of my deepest thinking along the lines you suggest.

It is a little early to say just what the outcome of all this will be and in discussing the subject I shall have to speak in general terms. Of course, what applies to Texas will not necessarily apply to other oil states and what applies to any of them probably will not fit Oklahoma at all. The other states live under constitutional government; Oklahoma's constitution was written by the present governor and, under the terms of the Treaty of Split Elm, negotiated between the Creeks and the Cheyennes, in 1855, the author of the constitution is not bound by its provisions.

I can see that in the future the policy of haphazard wildcatting will not be carried on. The areas to be explored for oil and gas will be selected with an eye to their desirability as military encampments. Thus, the regions around Fort Sill, Okla., Fort Riley, Kans., and Fort Sam Houston, Tex., probably will be favored.

The states must not be put to greater expense than necessary and instead of bringing the troops to the oil fields, the fields will be brought to the troops. Oil fields will, therefore, be selected because of climate, which must be the best imaginable to make the soldiers feel at home, drainage, water supply and accessibility to bootleggers.

What we need is an Act by the various legislatures which will declare that no wildcat shall be drilled at distance greater than 50 miles from an established National Guard post. States like Texas which have more than one encampment point will have to provide a way for selecting the post, as no state should be permitted to have more than one zone of wildcatting.

Mr. J. B. Gambrell, of Tulsa, who also is a deep thinker, suggests that every wildcat proposed should be the subject of a popular vote. Under his plan a company would apply to the commanding general of the guard for permission to drill a wildcat. A special election would then be called by the governor, the voters would be asked to express their choice of locations by designating the military post from which the wildcatting would be directed.

I think his idea is good but the matter could be handled more speedily if the voting were done by the soldiers. They should not be limited to their own states, but permitted to order the wildcat drilled anywhere. Thus, an Oklahoma oil company would be directed by the Oklahoma National Guard to drill near Fort Snelling, Minn., in the summer, and Ft. McRee, Florida, in the winter.

So much for wildcatting. As to the wells already producing, they should be handled by a committee of colonels on the governor's staff. The less they know about oil the better, for the experts in the business having gotten themselves into a mess that is without doubt the most complete in all history, our only hope of rescue lies in the keeping of practical oil men well in the background.

If any more good thoughts come up, I shall be pleased to let your readers have the advantage of them.

ELLICK BOTTS,
Consulting Colonel, Okla.
National Guard.

* * *

Frank E. Kistler, president of the Grayburg Oil Co., San Antonio, has been elected chairman of the board of the Reiter-Foster Oil Corp., Tulsa. Mr. Kistler was the organizer of the Producers & Refiners Corp., now controlled by the Prairie Oil & Gas Co.

* * *

R. D. Saunders, who was purchasing agent for the Southern Crude Oil Co., Fort Worth, continues in the same office as divisional purchaser for the Stanolind Oil & Gas Co., which recently absorbed Southern Crude.

* * *

Mr. Paul Kroeger, of Guthrie, Okla., poet laureate of Oklahoma by legislative act, seems to have fallen down on his job. He has turned out a few little things, apostrophizing the earth, the sea and the sky, but nothing about "Alfalfa" Bill Murray. There's a man size subject for any poet. If Mr. Kroeger needs help on it, we will be happy to write down the rhymes and let him fill in the rest of the words.

* * *

Possibly to investigate the political situation abroad, but more probably merely to enjoy a vacation that has been planned for years, Mr. and Mrs.

James P. Kem sailed from New York, Sept. 5, for a stay of two months in Europe. Mr. Kem is vice-president and general counsel for the White Eagle Oil Corp., Kansas City.

* * *

Mid-Continent people are watching with interest to see whether H. F. Sinclair rises to the bait thrown out by Gov. W. H. Murray. On Aug. 29 the governor handed a statement to newspaper men in which he returned to his old grudge. Sinclair and the federal courts are the two bones which he digs up and gnaws on every few days. This time it was Sinclair. The statement was so "hot" that the newspapers and the press associations, having in mind that there are such things as libel laws, refused to print it. This past week it appeared in the Blue Valley Farmer, in the governor's personal column. This newspaper is owned by the Murrays.

Newspapers are sued every day for far less than the governor said about Sinclair. Never mind what it was, it will not appear in these columns any more than it did in the dailies.

* * *

The week's best story concerns H. D. McCracken, Oklahoma-Texas division superintendent of the Illinois Pipe Line Co., who lives in Fort Worth.

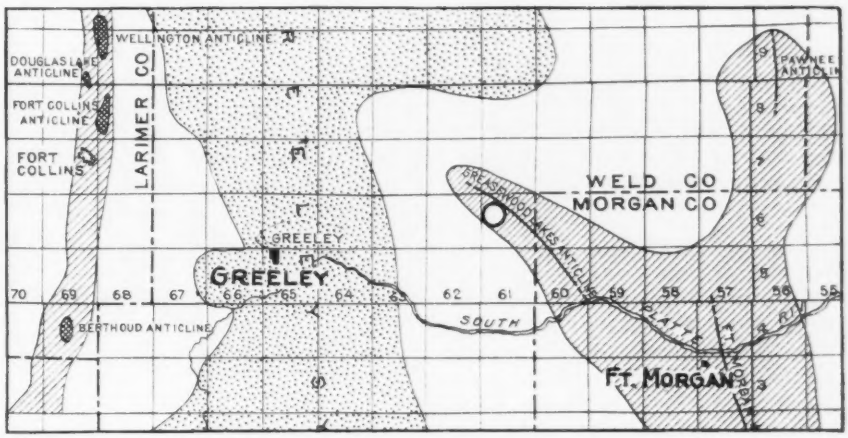
A few days ago Walter W. Fleming, president of the Marathon Oil Co., which, like the Illinois Pipe Line, is owned by the Ohio Oil Co., sought the opinion of Mr. McCracken on the alleged superiority of Marathon gasoline.

"Tell me," said Mr. Fleming, "leaving out all bias in the matter, is our gasoline as good as we have been telling people it is?"

"I don't know," replied Mr. McCracken, "I have never used any of it."

"What!" exclaimed Mr. Fleming, "do you mean to tell me that you work for the Ohio Oil Co. and don't use its products?"

"Exactly," said Mr. McCracken. "You fellows have been telling me all along about the money you lose on each gallon, so I am following the policy of saving money for us by getting gasoline from other companies."



White circle shows approximate location of the new Greasewood field, in Weld county, Col., from a map prepared by the U. S. Geological Survey. The new field is in Twp. 24-6N-61W

One Well to 40 Acres Spacing In New Colorado Field

TULSA, Sept. 10

ONE bit of constructive planning that has been done in the development of the Greasewood field, in Weld county, Colo., is that of well spacing. Except for the discovery well, drilled in last October, all wells now drilling and locations made are in the center of 40-acre units. With the great depth—more than 6640 feet—the wisdom of wide spacing has been apparent to all. The acreage surrounding the two wells now producing is in such shape that there is little opportunity for someone to get 10 acres, start a well on it and thus upset the present spacing program.

No definite move toward development of the field as a unit has been made, although there has been some conversation along this line. Paul S. Ache, president of the Reiter-Foster Oil Corp., is known to favor the pooling of acreage and made this suggestion some time back, before the Reiter-Foster completed the second well in the pool, two weeks ago. This well is in the NE NW of 24-6N-61W.

Within a short time there should be a dozen or more wells under way in the immediate area. While the first well was not outstanding, making around 300 barrels initial production, it was bottomed in a broken sand above the true pay picked up in the Reiter-Foster well to the north. This test touched off the fireworks, making 66 barrels per hour on a continuous 24-hour test. It is to be tubed and it is estimated good for a consistent 1000 barrels per day. Its total depth is 6652 feet and is eight feet in the true pay. Pay thickness is unknown.

Cost of drilling is one deterrent to close spacing. Estimates on the total figure for a completed well vary between $100,000 and $125,000, although it is admitted that a company drilling several wells may beat this lowest figure substantially. The contractor's price at this time is $8 per foot. While the Reiter-Foster well was finished with one string of pipe, besides the surface casing, there was some difficulty in completing the well and consideration is being given to the use of two strings.

The new field is about 26 miles east of Greeley and about an equal distance northwest from Fort Morgan. It enjoys a natural advantage in that near the town of Fort Morgan is an old military post, which would be useful in the event that martial law is ever declared in the field.

Fast time will be made with the rotary drill, as there is a

great thickness of shales. Water supply is good, there is a lake covering three or four sections of land some seven miles from the Reiter-Foster well. As the field gives indications of producing considerable gas, fuel for drilling doubtless will be cared for from this source.

Oil is high gravity. The following analysis was made by a Mid-Continent refiner on a sample from the discovery well. While the discovery had its production from the broken pay above the Muddy sand (top part of Dakota formation) the oil conforms in all essentials to that of the Reiter-Foster well, except that the gravity of the latter is a little better than shown by the sample analyzed. That would be accounted for by the weathering the sample underwent.

"This crude oil is a paraffin base crude and resembles Pennsylvania crude in many respects," stated the report accompanying the analysis. "The crude oil has a 'sweet' odor and the sulfur content is very low. The analysis of this oil indicated that it would be very desirable for the manufacture of viscous and non-viscous lube stocks. It will be noted especially that the flash viscosity relation in case of the steam refined stock is very good. The wax distillate and steam refined stock fractions contain a considerable quantity of paraffin wax, the content of which is in excess of that found in the average Mid-Continent crude."

The discovery well, drilled by the Platte Valley Petroleum Corp., which is headed by Menus Johnson, of Fort Morgan, was put down with cable tools and a 64-foot derrick. It was quite a task and occupied more than four years. During that period it was shut down from time to time for further financing and because of mechanical troubles. Persistency won, however, and the small well that was completed opened the pool that looks like the principal discovery in the Rocky Mountain country in several years.

Continental Oil Co. is active in the pool, drilling two wells and getting ready to lay a pipeline from its Denver refinery. The Reiter-Foster company's operations, including its first well, are on acreage leased by the Platte Valley company and turned over to Reiter-Foster for operating, Platte Valley retaining an interest. Principal lessees in the immediate vicinity of the two producing wells are the Reiter-Foster-Platte Valley combination, Continental Oil Co. and Ohio Oil Co.

DENVER, Sept. 12.—Production of the Reiter-Foster Oil Corp. well in Weld county was 382 barrels for the 24 hours ended the morning of Sept. 3 and 390 barrels the following day. The well came in more than two weeks ago flowing 66 barrels per hour. It has been flowing by heads and when tubed is expected to better its performance.

ANALYSIS of Crude from the Discovery Well in the New Greasewood Field, Wild county, Col.

Gravity A. P. I.	40.8
Color (10% solution ¼" cell Lovi)	55
B. S. and W.	.20%
Sulfur	.084%

Summary of Yields

	Per Cent Crude
Gasoline (55.7 gr., 405 e. p.)	30.87
Kerosine (41.1 gr., 520 e. p.)	13.13
Gas oil (35 gr.)	12.10
Wax distillate (31.5 gr., 84 vis., @ 100° F.)	26.90
Steam Refined stock (560 flash, 167 vis. @ 210° F.)	15.60
Loss, fire and steam distillation crude	1.25
Loss, distillation heavy naphtha	.15
	100.00

Sinclair Again Buying Stripper Well Oil

TULSA, Sept. 12—Prairie Pipe Line Co. has filed additional tariffs, from all its trunk line points in Oklahoma and Texas, to Coffeyville and Kansas City, Kans. The Coffeyville rate is 15 cents and the Kansas City tariff is 30.75 cents per barrel. In addition, there is a charge of 20 cents for gathering, on each barrel. Effective date is Sept. 19.

Only customer at the two new points is the Sinclair Refining Co. Trunk line points from where the rates are effective are: Bartlesville, Okla.; Captain Creek (Nowata shallow district); Cherokee station, (Ramona, Okla.); Creek station, (near Jenks, Okla.); Hensley station (Jacksboro, Tex.); Indian station (Osage county, Okla.); Manual station (Drumright, Okla.); Pauls Valley, Okla.; Red station (Burkburnett, Tex.); Ringling, Okla.; Temple, Okla., and Tiffin, Tex.

Route will be Prairie pipeline to Cobb station, Kans., delivery to Coffeyville refinery through Sinclair-Texas Pipe Line Co. and to Redel station, Kans., where Sinclair-Texas line takes the oil for delivery to the refinery.

Significance of the new tariffs is the return of the Sinclair as purchaser into old, settled producing districts. Following sale of its interest in the Sinclair Crude Oil Purchasing Co. last year, the Sinclair Refining Co.'s requirements have increasingly been met from flush districts, largely Oklahoma City and East Texas. The former source of supply is entirely shut in and East Texas materially restricted.

Another arrangement between the Prairie pipeline and Sinclair is through tariff filed by Sinclair-Texas Pipe Line Co. some time ago for movement of East Texas oil from Troup station to Coffeyville and Kansas City, via Prairie lines from point near Mexia. Rate to Coffeyville is 35 cents and to Kansas City 50.75 cents per barrel, plus 10 cents gathering charge.

New California Price War Threatens As Independent Seeks Gallonage

By Jack N. Westsmith

N. P. N. STAFF WRITER

LOS ANGELES, Sept. 11

SOUTHERN California is on the verge of a new gasoline price war that is expected to break into open hostilities within the week unless independent retail and wholesale gasoline prices are raised and sustained at levels near those posted by major refining companies.

Of some 50 companies and individuals paying tax on gasoline sold in California, there are seven that make up the so-called major group that have distribution ranging from 6 to 25 million gallons per month, each, nine of the larger independents that market from one to four million gallons, and in addition to approximately 20 individuals and small companies with distribution of a few thousand gallons, there are 12 or 14 small independents that distribute from two or three hundred thousand to slightly over a million gallons, each.

Although previous disturbances in the Pacific Coast gasoline markets have been, at least, partially accountable to activities of the major marketers fighting for gallonage, the present unsettled conditions is laid at the door of one of the larger independents. This company started chiseling prices in an effort to build up sales at the expense of other members in the group.

To meet this competition and protect their accounts the independents, large and small, started shading spot quotations until at the close of the week tank truck and trailer deliveries of "city-specification" gasoline were being made to points within 35 or 40 miles of the refinery at as low as 7.50 cents per gallon, tax included. The major price on similar deliveries is 11.50 cents.

As a result of this break in the wholesale structure, independent unbranded and "private" brand gasolines were retailing generally in the Los Angeles Basin at 10 cents, or 6 cents under the price being maintained on most major products. There has been some cutting on the major brands in an effort to combat the cut-price independent, but this policy has not been general.

Unable to stand the inequitable competition offered by the six-cent differential, major refiners are again discussing the advisability of introducing a third grade gasoline to compete with the price-cutter.

On this question there is a definite division of opinion among members of the major group. Opponents argue against it partially because of the considerable expense involved in installing equipment necessary to handle the cheaper product, but primarily because of the possible disastrous effect a cheap colored gasoline would have on the sale and reputation of widely advertised gasolines that are also colored. It is contemplated that the new product would be colored, possibly green, blue or violet.

ESTIMATES that have been made by the various major companies on the cost of labor and equipment necessary to handle the new gasoline throughout the Pacific Coast marketing territory range from $200,000 for companies having comparatively light distribution to nearly $1,000,000 for the leaders.

It is generally believed that, with few exceptions, the major refiners have been unloading through brokerage channels considerable quantities of gasoline at prices below the general level. This practice was adopted as a means of holding independent accounts in the face of low-priced products offered by the small refiners.

One of the proponents of a third grade gasoline has tried a cheap grade of gasoline in several of its distributing points, suburban to Los Angeles. This is the second experiment to be tried on the Pacific Coast to curb the current unstabilized marketing conditions and, in this instance, the cheap product, colored blue, outsold the regular white gasoline three to one and resulted in a substantial increase in the company's sales in the experimental areas. This was under conditions where the new product retailed at 10 to 12.50 cents in competition to the regular gasoline selling at 16 cents, and where station attendants and agents for the company were instructed to advise and push the sale of the higher quality branded gasoline.

If the third grade gasoline is decided against it is considered likely that major wholesale and retail prices will be reduced. At first, such a reduction would be confined to the Los Angeles Basin and such San Joaquin Valley points as are confronted with cut-price dealers.

Pending action by the major refiners in either of these two directions, the Oil Producers Sales Agency and major purchasing companies are extending every effort to corral "free" crude that is now available on the open market to the "bootleg" refiners. This action is considered necessary for stabilization, because, although it will not afford a curb on those independent refiners with their own production, it will tend to curtail expansion of the small plant operator who is dependent on crude bought on a day to day basis.

The Future for the Oil Jobber

By L. V. Nicholas*

(Presented before Illinois Oil Jobbers Association, Peoria, Aug. 20)

THE answer to the question of the future for the oil jobber very largely depends on what you accept as the definition of an "Oil Jobber."

You, who for so many reasons have chosen to call yourselves "Oil Jobbers" are, in reality, retail merchants specializing in oil but devoting increasing time and attention to the sale of tires, automobile accessories, specialized service in the form of super-lubrication and automobile washing—to say nothing of soft drinks, candy bars, cigarettes, etc.

In other words, in discussing what the future holds for the "Oil Jobber," we are actually discussing—in a broad way—the future of the retail merchant; and retail merchandising, in my opinion, can almost be classed as a fine art, always having a future and always capable of paying satisfactory and substantial returns to the men who understand it and are capable of keeping abreast of what the public demands and served in the way the public likes it.

The "Oil Jobber"—as we used to know him—who handles nothing but his own private brands of gasoline, kerosine and lubricating oils, is about as hard to find as the old-fashioned drug store.

The modern "Oil Jobber" is no longer a "jobber" and, if he is successful, you will find he is a wide-awake merchandiser carrying quite a wide variety of products, outside of petroleum, with new additions to his line constantly under consideration.

If there is an "Oil Jobber" today who does not handle at least one grade of nationally advertised gasoline and another of nationally advertised lubricating oil, he is the unusual exception—not the rule. For the sake of avoiding any misunderstanding, I want it distinctly understood that in discussing what the future holds for the "Oil Jobber," I am discussing this modern type who specializes in petroleum products, who is every day taking on new and diversified lines of merchandise and who, in the future, will probably have to be classed *less* as an "Oil Jobber" and *more* as a general merchant.

OIL merchandising, as a special development in general retailing in the future, holds promising business opportunities for the so-called Independent Oil Jobber of today, Mr. Nicholas believes.

Taking his analogy from the development of the drug store, from the apothecary shop to the merchandising center of today, he believes that the place for the Independent marketer is going to be in the handling of the several brands of gasoline and motor oil for which there is a demand in the territory. With this development he believes will be a tendency on the part of the general oil companies to cut down the number of their stations which handle only one brand of petroleum products.

On the alertness of the "Oil Jobber" to meet the ever-changing situation depends his future success and it is just as necessary for the "Oil Jobber" who hopes to survive, to add new lines and improve old methods as it was for the old-style druggist to graduate from a prescription counter and a line of patent medicines and take on cigars, cigarettes, a soda fountain, and gradually a complete line of sundries in order to regain his place as an active community center which he seemed to have all but lost before he woke up.

I would like to see the term "Oil Jobber"—insofar as it is applied to the operator of service stations and tank wagon routes—discarded and the term "Oil Merchant" substituted.

From the standpoint of the pure psychology of the situation, the "Jobber" must begin to think of himself as a retail merchant and plan as a retail merchant.

There is nothing undignified or belittling in acknowledging oneself a retail merchant. Some of our proudest names in America and our greatest fortunes have been built up by men who were nothing more nor less than retail merchants and who thought only in terms of service at a profit.

Just stop and think of the names each and everyone of you know that are both socially and financially prominent because their owners carved careers of outstanding success out of retail merchandising!

There is no logical reason why an "Oil Merchant" with a line of service stations should confine himself to but one brand of gasoline, whether it is his own private brand or that of a large company for whom he operates as agent.

The average consumer is sold on the brand he intends to buy long before he drives into the service station for a fill and, if he does not drive in for a particular brand, he at least drives in to receive a fill of a brand that is acceptable to him in the absence of the brand he would prefer.

His mind does not work one whit differently than yours does when you go into a drug store and ask for a particular safety-

*Authority on petroleum marketing, Chicago.

This station, opened in Washington by a merchant company known as the Automobile Public Service Corp., sold 16 brands of gasoline through 19 pumps. It handled 10 brands of motor oil. It is the type of station the author of the accompanying article believes will be operated profitably by independent petroleum marketers in the future

razor blade, cake of soap or shaving cream, and the properly located, properly managed service station, selling half-a-dozen nationally recognized brands of gasoline, will find gross sales volume multiplied and the increase out of all proportion to the slightly larger investment in equipment and overhead expense.

In my opinion, it is just as ridiculous to assume that the "Oil Jobber" of the future is going to tie himself down to one company brand of gasoline, or lubricating oil, as it would be to assume that the drug store, the grocery store, or the department store—whether chain operated or otherwise—would confine itself to a single brand of merchandise.

The final and logical consolidations in the oil business have not yet begun to take place and the outstanding brilliant futures and financial successes in retail merchandising—specializing in oil—are yet to be established.

The type of easy success that used to be possible in what we still call the "Oil Jobbing Business is "*out*" and very definitely a thing of the past.

The easy success of large gallonage of the so-called "cut-rate" or "bootleg" Oil Jobber is "out" and a thing of the past.

Price structures are no longer inflexible and cut prices are met promptly and effectively. "Blue Gasoline" was well named so far as it applied to the fortunes of the big-gallonage cut-price operator and its introduction was a sane and logical move, although long overdue.

Throughout our entire history, since the advent of the automobile and the greatly stimulated demand for gasoline and lubricating oil up until now, our retail price structures have been as unbelievably dumb and as unintelligent as our system and methods of producing crude oil, where the organized rush to legally steal the other fellow's oil has forced the drilling of protective offset wells and has ravished our national resources and established a type of ruthless, destructive competition that has cost the industry countless millions of dollars and brought us to the verge of industrial bankruptcy.

If we care to be honest in the matter, the "Oil Jobber" is really a bystander who advances and declines his price to meet competitive exigencies entirely outside of and beyond his control and the "Jobber" must get down to the "brass tacks" of the situation and begin to see the picture as it actually exists.

The opportunity for the independently-owned service station operators to establish their own national brands of gasoline and lubricating oils is passed—probably never to return.

Today, in every community, the public has half-a-dozen or more outstanding national brands of gasoline of high-grade quality and specifications from which to choose and needs and wants no more.

It is not logical nor economically sound to believe that all these brands will continue for very much longer to operate under the high and unnecessary overhead of limiting dealers to one brand or even limiting their own stations to their own brand.

There are greater possibilities for reduced overhead and enlarged profits by handling from three to a dozen different lines of gasoline and lubricating oils at one service station and it is infinitely more logical than the lines along which the industry is at present experimenting.

The Doherty plan for unit operation of oil pools, once so loudly and vigorously condemned, is today accepted as economically sound, geologically correct and the lawful solution to the wasteful, piratical methods of crude oil production that have grown up around the old system.

This Doherty principle of unit operation applied to our retailing methods has equally sound and revolutionary possibilities and should be given your serious study and consideration.

Consumer demand, in any given area, is definitely limited and with very few, if any exceptions no one company or group of companies has ever succeeded in gaining an exclusive hold or control of the business in any area.

In other words, the consumer is practically always able to easily and conveniently purchase his particular favored

brand of gasoline or lubricating oil, whatever it is, wherever he lives and presumably he will always be able to do so.

Under our present methods of distribution, however, to make this possible, there is an appallingly high overhead in the upkeep of a dozen stations, each handling its own exclusive brand, where a consolidated station could handle the entire dozen brands at a fraction of the overhead and such a consolidation has no greater tendency to restrict or handicap the sales of any one brand in favor of another, any more than the sale of the various brands of cigarettes, razor-blades or any other line of branded article is handicapped by reason of the fact they are all sold over the same counter.

Consumer acceptance is built up before the sale is made and not at the time of purchase.

THE Independent "Oil Jobber" who will think of himself as an "Oil Merchant" is ideally situated to pioneer the way for this much needed reform in our marketing and distributing methods and the more you study and analyze its possibilities, the more firm will become your conviction it offers a solution to our pressing marketing problem of excessive investment and unnecessary duplication of service station locations and appallingly high marketing costs.

It is my firm opinion and belief that we have not yet scratched the surface of the possibilities for successful and highly profitable merchandising of petroleum products and that you men who pioneer in this field will not only have a highly dignified and prosperous future ahead of you, but many of you may become the outstanding merchant princes of a new era in petroleum marketing.

It is a waste of time to discuss ponderously and seriously the monopolistic tendencies of such combinations as the Vacuum-Standard of New York; Cities Service-Richfield; Sinclair-Tidewater; Standard of New Jersey-Standard of California; Standard of Indiana-Pan American—either consummated or proposed—because, as a matter of fact, they are economically sound and competitively justified and logical from the ground up.

What the "Oil Jobber" or, as I prefer to call him, the "Oil Merchant" must recognize is that these consolidations open new avenues and opportunities for him in the long run.

It is my firm conviction you must all look outside of what you have considered your limited field of operations for your future success and inside for the shortcomings and failures that have limited your activities and curtailed your profits.

In other words—if I had my money invested in the oil marketing end of the business as you men have, I would study ways and means to combine the marketing at my stations and through my facilities, of as many brands of gasoline and lubricating oil as I felt had sufficient public acceptance to justify carrying them.

If I heard that Gulf Oil, Cities Service, Pure Oil, Sinclair, or any other company were contemplating coming into my territory, I would hotfoot it to their nearest division headquarters and solicit the representation of their line through my facilities, in addition to the line or lines I was already carrying.

Instead of looking outside of the oil business for new lines of merchandising, I would get busy within the Oil Industry and I would lie awake nights, if necessary, to figure out convincing arguments and sound marketing procedure that would convince the companies whose lines I wanted to handle that I was on the right track and that my plans were worth their consideration.

My talk to you today is of necessity sketchy and possibly jumpy but what I am trying to get over to you is, I believe, a fundamentally sound idea and I am going to leave the idea with you—the details you must work out for yourselves.

PERSONALLY, I am convinced the oil industry must "back track" in its marketing methods.

Now that gasoline and lubricating oils are primarily sold by brand name and public acceptance and demand is created before the sale, there is no justification for the high overhead created by exclusive distribution of one brand only at service stations where practically the same investment could supply outlets for the products of a dozen different companies and actually give a better service.

I predict if you men here today intelligently take hold of this idea and work it out along sound and logical lines, you will not only re-establish yourselves in a firm and profitable place in the oil industry, but you will bring about reductions of marketing overhead costs that are so essentially necessary at this time.

IN ANSWER to the question I know some of you would like to ask me as to whether it would be my idea to try and combine at one station the sale of Standard Oil, Phillips Petroleum, Gulf, Sinclair, Cities Service, Pure Oil and other lines too numerous to mention: "Yes, I certainly would" and I would not be above trying to talk any one of those companies into the idea of leasing to me the largest and best location they had in a given territory and then trying to persuade the other companies who are also represented in that territory to close up their facilities and let me sell their brands through the station I had leased.

In other words, that is exactly the idea and revolutionary as it may sound to you right now, I believe you will see it or its equivalent in operation very shortly.

If consolidated operations for the sale of petroleum products are not possible and practical and a Standard Oil brand cannot hold the same proportion of the trade when sold at a station where Sinclair, Cities Service, Pure Oil and other products are available, or they in their turn cannot hold their portion of the trade where Standard or other products are available, then the millions spent for advertising to establish their brand names and brand demand becomes a highly questionable expenditure.

Think it over!

Experiences of an American Engineer in Russia

By George A. Burrell*

Part 7

THE American press has lately heralded the fact that the Soviet Government has returned in considerable degree to capitalistic methods because workers in Russia have recently been put on a piece work basis as an incentive for them to do better work. But all during my sojourn in Russia I noticed that workers received different wages, and that there was inequality among the people.

It is stated that in the future Communistic state money will possess little significance. Everybody will be cared for in old age and sickness, educationally, and so on, and there will be no necessity for accumulating money. There will be so little if any difference in the material possessions of the people that envy and malice will not be excited and hence many of the difficulties that beset present civilation will disappear, it is said.

Of course there are not now the vast differences that existed in former days, not by any means, and I suppose there never will be again, no matter what the outcome of the present experiment. But there is a wide scale of wages. Maids, for instance, receive 15 roubles a month. They also receive food and lodging and some clothing, and are granted one holiday in five days like anybody else. One of the Russian technologists in Grozny received somewhere between 600 and 1,000 roubles a month. Party men in Grozny received a maximum of 250 roubles. The chief engineer of the gas department, not a "party" man, received 350 roubles.

The janitor of our apartment house got 35 roubles, although he may have received free rent and other things. Unskilled labor received about 70 roubles a month, and skilled labor about 85 roubles. These wages vary in different parts of the country, but they are low everywhere, although I heard of an engineer in Baku who had received a bonus of many thousands of roubles for inventing a drilling method. This consisted of the application of a steam turbine as motive power for a rotary rig. This man was in the United States last year demonstrating his invention.

MORAL and social conditions in Russia under the Communistic rule will be discussed by Colonel Burrell in Article 8 to be published next week. He will tell of the campaign of the government to suppress the Christian religion and of its results thus far.

A rouble is worth, at the normal rate of exchange, about 54 cents. However, it has no international rating and can be purchased in adjoining countries for 7 to 10 cents. That is about its buying power, I should say in terms of currency in America.

Much of Russian goods is purchased at low priced government stores. It is when the native, or American either, goes to the private markets that he discovers the rouble is not worth much.

Out of a man's salary, and to my knowledge all of them are on a monthly basis, must come various taxes which the government levies. These include sums for the privilege of buying at the government stores, and party and trade union dues. I know that in some cases the total can amount to 33 per cent of a man's wages. Party men particularly are supposed to donate freely out of their stipends. They must also give up a great deal of their time to Party and Government matters.

Government loans are issued from time to time and subscription to them is virtually compulsory. On at least one of them interest was suspended. There are subscriptions for all sorts of things constantly appearing; say to build an aeroplane for the government, to relieve distress in some part of Russia, and for other matters. Not many refuse to donate if they can possibly do so, for this may invite some hostility from the leaders.

But labor receives various free perquisites in addition to its money wage. What are known as social services prevail everywhere, and are constantly being developed. Unemployed receive funds from state insurance funds up to 30 roubles a month, depending upon a person's salary, although I believe that there is no unemployment of consequence in Russia at the present time. At least I was repeatedly told that there was a dearth of labor. There certainly is of skilled labor.

The Communists constantly announce this through their press and speeches, particularly pointing to America's unemployed, 5,000,000 to 10,000,000 or whatever it is.

A sum equal to about 15 to 20 per cent of the wages is paid to the state and insurance fund by the factories, collective farms, and other revenue producing institutions; not by the employees. Provision is also made for sickness, accidents, maternity cases, housing, funerals, old age, etc. Women before and after child-

*Burrell-Mase Engineering Co., Pittsburgh, Pa.

S.O.S.'s IN INDUSTRY

A SHORT TIME ago, an ambulance was noticed waiting near the Pennsylvania Railroad tracks just outside of Oil City. It was learned from the inevitable crowd, that always seems to spring right out of the ground around an ambulance, that a man had been accidentally shot at Eagle Rock, a little settlement about six miles up the river.

The above is not news. It was told before in our local paper. But the point that impressed us, and which was not brought out in the newspaper accounts, was the fact that the Pennsylvania Railroad dispatched a yard engine to Eagle Rock immediately to bring the man to the ambulance. They didn't stop to inquire if the man owned a refinery or a Packard or whether he belonged to the Odd Fellows, Knights of Columbus or the Masons.

An emergency existed and the Pennsylvania Railroad met it gracefully. Telegraph instruments clicked, telephones buzzed — and semaphores dropped as that mighty yard engine tore out of the yards on to the main line toward Eagle Rock on its errand of mercy.

There are emergencies in the oil business also. A refinery burns, a still explodes, an ill adapted pump blows up, or a serious breakdown threatens to shut down a pipe line. In such events, everything we have is yours, day and night — a large stock of pumps, manufacturing and repair facilities and shipping facilities to make speedy deliveries.

In an emergency everything we have is yours.

REFINERY PUMPS
FOR HOT OIL
and many other refinery services
TRANSIT DUPLEX ROTARY PUMPS
PIPE LINE PUMPS

BEAUMONT, TEXAS
E. L. Wilson Hardware Company

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F. C. Richmond Machinery Co.

NATIONAL TRANSIT
PUMP & MACHINE CO.
OIL CITY, PA.

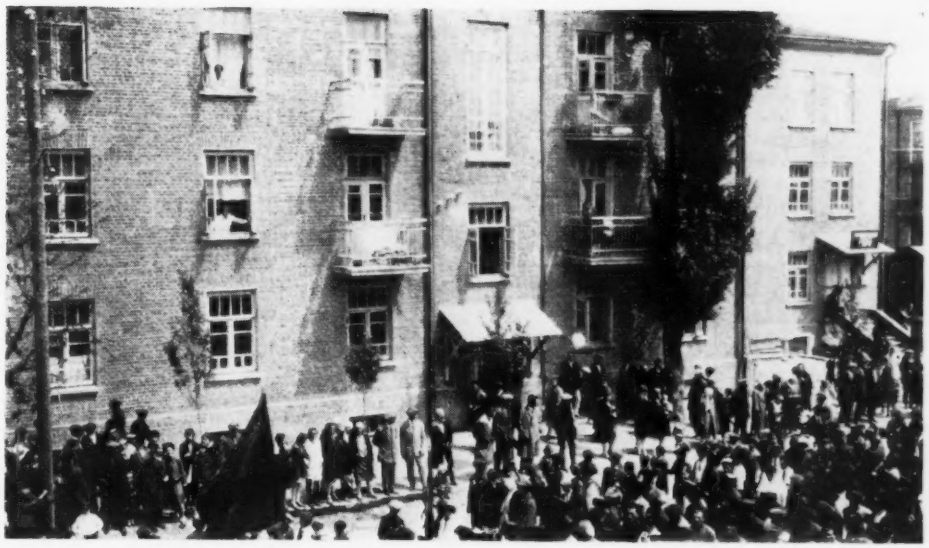
PHOENIX, ARIZ.
Pratt-Gilbert Co.

LOS ANGELES
Republic Supply Company of California

ST. LOUIS, MO.
Reeves & Skinner Machinery Co.

NEW YORK PHILADELPHIA CLEVELAND PITTSBURGH LOS ANGELES HOUSTON TULSA NEW ORLEANS

FIELD PUMPS
TOOLS
for Pipe Line Construction
GAS ENGINES
GAS ENGINE GAS COMPRESSORS



A street parade of workers in Grozny passing one of the modern apartment houses of that industrial center

birth for periods of eight weeks each way, are freed from work with full pay. Some nurseries are provided where babies are left while mothers are at work.

Rewards come to a factory or an institution; generally not to individuals, although badges of honor, say the Lenin medal, are distributed to workers. Some workers in our town received them while I was in Grozny, because it was said that the Grozneft petroleum division had finished its five year program in two and a half years. But mainly better working conditions may be granted, or a better library, or better housing quarters. Some workers receive traveling scholarships abroad.

I tried to find out how much money or property a person could accumulate without having it confiscated. One party man told me that anything over 15,000 roubles was appropriated by the state at a man's death. I do not think there is an inflexible rule but at any rate, a person stands little chance of accumulating much, I should say. Wages are too low and taxes too heavy. A man's standing with the party also has considerable to do with the matter, I judge. However, a person may build and own a house and I know of one chap who imported a Chevrolet automobile.

Heads of departments receive one month's vacation with full pay and free railroad fare to the resorts, and workers two weeks' vacation. At least that is the program that the Communists attempt to carry out. I can say that it is in force as far as I could see.

A group of large hospital buildings, brick and cement, had been built at Grozny, and more are projected. I went through the hospital and was impressed with its condition. It was filled with people of the working class, the rooms were clean and well lighted, and it seemed to me that the patients were receiving good care. All patients who could stand it were given a bath when they first entered. I was told that bed linen was not changed often enough because of lack of linen. I saw large cans of milk in the commissary and quantities of porridge being prepared in the kitchen. I mention the milk because ordinarily it is a scarce article for the natives. Drugs are scarce and so are medical instruments and apparatus, although I noticed an X-ray outfit. Dirty linen and clothes were put through a modern steam laundry.

I recall that hospitals and medical service were severely scored by an American woman in Grozny. She naturally was thinking of spick and span hospitals of the modern American type, but forgot that many hospitals in Russia, like the one in Grozny, are new to a particular section. None existed before. Further, under the present plan medical graduates have to spend the first three years of their practice in the villages; thus the latter receive fairly expert medical attention for the first time in their history.

I also heard some criticism of the medical service by the natives, the latter saying that it was not prompt enough, or skilled enough, and that drugs were not adequately supplied. I suppose this is so. However, I also visited the dispensary and saw a constant flow of people being cared for. They did not get the attention that an American dispensary gives, and the sanitary arrangements are by no means as good, but a need was supplied more adequately than ever before.

I recall that Eva Grady, in her book, "Seeing Red" said that near Kharkov a man was cut with a scythe and waited so long for medical help that he bled to death. Undoubtedly this could happen, although seldom, I should say.

I was impressed with the skill and kindliness of the Russian doctor in Grozny, who catered to American wants. I am sure that in handling his Russian patients that he gave them attention to the best of his ability, for I became fairly well acquainted with him. Mrs. Burrell became ill in Moscow, and while the doctors were slow in coming, when they did arrive they came in a rush; seven of them all told. Some famous Russian medical men were in the group. Of course foreigners receive special attention so our experience would not be typical of that of of the natives. But doctors can be a harassed group; there is a limited supply of them, and there is so much to do, and equipment and medicines are scarce. Much remains to be done in Russia to

Even the humble log-cabin home in Russia, with its semi-oriental window trimmings, harks back to the Mongol tribes which settled and conquered Russia in the dim ages of history

improve sanitation and impress upon people the need of ordinary hygienic conditions to lower the sickness and death rate. Furthermore, a doctor himself faces the same shortage of food and clothing and housing facilities that everybody faces.

Doctors are paid about 150 roubles a month, in some cases at least. Those who also lecture in the universities, called professors, receive more. For such publications as they produce they receive additional sums. The term professor has a real meaning in Russia. It designates a man of advanced university training and of learning in the arts or sciences.

Doctors must devote most of the day to hospital cases, treating a specified number each day. After hospital hours, in some cases at least, they are allowed to engage in private practice. In Grozny the Americans received free medical attention. In Moscow I paid a doctor 20 to 30 roubles per visit.

The Communists have a passion for measuring work; a doctor, dentist or chemist, say, may do, in terms of the number of patients he treats, or the number of balance weighings, titrations and distillations he performs, and so on, in the laboratory.

Personally I do not see how a research man's value can be measured in terms of the number of routine operations he may perform each day. I do not mean to say that a man's value was rated by this method, but still I know that these routine operations in research laboratories are recorded for some reason or other.

Russians have been criticized by American engineers for being too statistical and too theoretical. I know they compile many figures and prepare charts and graphs in large number; whether too much I cannot say. To make students more practical the authorities compel students to spend long terms in practical work interspersed between classroom periods; far more than is usual in American institutions.

As far as holidays are concerned, I know that generous ones are granted. All through the spring, summer and early fall men were away on their vacations. Frequently they went to the mineral spring resorts nearby in the Caucasus, or the Crimea; the north shore of the Black Sea. Here former palaces and mansions of the rich have been turned into resort hotels and sanitariums for the workers. To these places are also sent workers who are ill or who are convalescing from sickness. I know this to be a fact because I talked to men who had been there, and also met them on their journeys to these places.

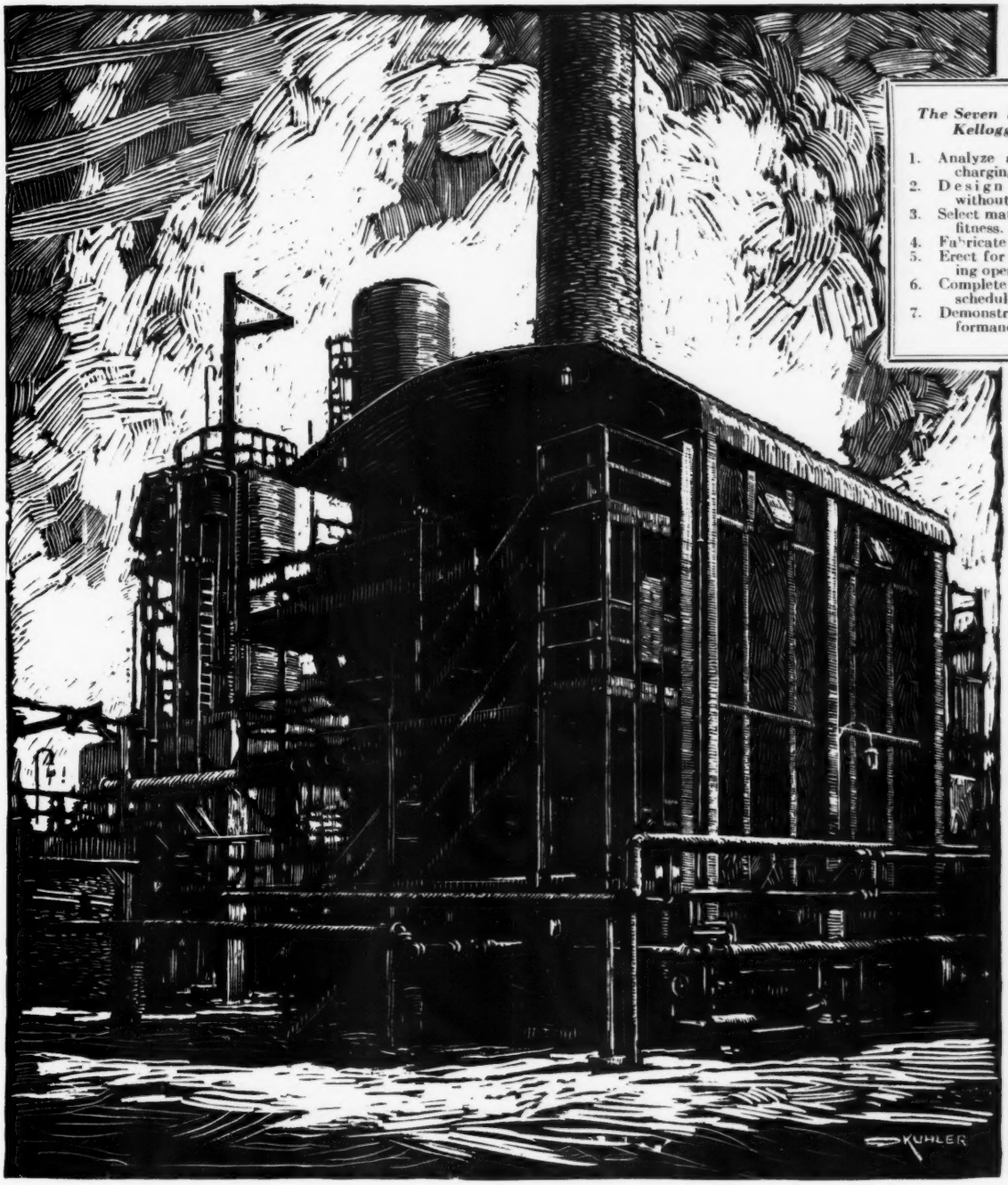
None of these places has the conveniences and luxuries that we find in our resorts, but certainly some of them are set in beautiful surroundings and where former mansions of the rich have been turned into holiday places or sanitariums, there is only needed better food and service to make them highly desirable places to go to, even from the American standpoint.

Returning again to the subject of equality among people in Russia, there are, as already indicated, all classes of people, including the ignorant peasant, (the Mujik) the workers of the cities, the intelligentsia, and the leaders of the "party" and government. Classes have by no means been leveled all to the same standing, literally speaking.

The Communistic ideal is to give all people the same opportunity. It stands to reason that many develop ahead of the others, and possess more ability and diligence. There has to be a Stalin and other party leaders, and there will always be workers of all classes. Of course the disenfranchised class will say that they are given no opportunity, but I have discussed their situation and the reasons why they are outlawed.

It will be a long time before the adult peasants' cultural status will be greatly improved, judging from what I saw of them, after 13 years of Communism. Scarcely a beginning has been made to improve village life, so tremendous is the task. However, in some sections a great deal has been done.

Party men enjoy such favors and privileges as can be secured. This is particularly true of the leaders. Many of them have the use of an automobile, very little for just pleasure riding I would say, but in their daily and nightly duties. I noticed that if anybody had good cigarettes they had them, and that they also had the best accommodations on the trains. They could set out a good dinner, or even a banquet on occasion, and their housing facilities were usually the best. They had comfortable offices to work in, in most cases. Most of the things they possessed or enjoyed, would not be considered much from the standpoint of an ordinary American executive, but still things they had were usually (not always) ahead of what most other people had, and away ahead of the possessions of the peasant. Of course the disenfranchised class are away down the scale, as far as their material possessions are concerned, or their



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opportunities for advancement.

The money system is unique. Wages are paid to the people, and they in turn pay most of it back to the government through the stores and other agencies that the state owns. I believe that about 5,000,000,000 roubles are in circulation, and there is said to be a metal reserve of 12½ per cent of this value.

Whether the printing presses are humming away making money far in advance of the metal reserve, I do not know. But the rouble depreciated much in value during the eighteen months that we were in Russia, because goods at the private stores cost several times as much before we left as when we first arrived.

Even in a country where no money was taken out or in and from which few Russians go, the people seem to sense in some mysterious way the depreciating value of the currency and each month the rouble bought less and less in the way of goods in the private stores. At one time in the private market place trade almost took on the nature of barter of goods solely; say of food stuffs for clothing.

Some economists say that Russia's reserves lie in her immense undeveloped resources and that a large gold reserve is not needed.

It seems to me that undeveloped resources are not liquid enough to provide ready assets and that only the amount of goods available for use or shipment constitute an adequate reserve. If this is so then but small reserves exist in Russia, because only a limited supply of ready goods is at hand. But foreign money is badly wanted to pay for imports for the five-year plan. Hence everything possible is exported. The world depression has hurt Russian business because much more (probably 50 per cent) has to be exported to secure funds equivalent to former exports.

The government became hard up for cash at different times during my stay and paid employees in scrip, good at the government stores. But this worked a hardship because this scrip was not acceptable at the private markets, hence the people could not supplement their government rations with food from the markets. Frequently the Grozneft Trust was weeks behind in paying anything to the employees. At times an abundance of some commodity would appear in town; say a carload of sugar. I was told that this was mainly for the purpose of drawing roubles out of their hoarding places.

These things indicated to me at least that the government was trying desperately to avoid too great inflation of the rouble, they well knowing the evils of this eventuality. I have a 1,000,000,000 rouble note in my possession. It was money of the Kerensky regime, and would not buy a pack of cigarettes at that time. The Communists themselves went through an inflation ordeal. In 1922 they wiped out the old currency and started a new deal. Of course currency inflation incurred in Germany and other countries following the war. A woman would go to market with a basketful of marks or kronin.

While I was in Russia the people began hoarding metal coins, feeling that this currency would possess value even if the paper money fell to a low or zero value, but this practice was stopped, or at least greatly reduced, by the government arresting those who were found with an undue amount of coins in their possession. Some of the hoarders in Moscow were shot. Whether this happened or not in our town, I do not know; probably not. But much could occur that I knew nothing about. No doubt the scarcity of coins constituted a hardship on the people. I repeatedly tried to buy small articles during the shortage, but received no change for a paper rouble; or at most only a paper receipt.

The five-year plan calls for an investment of about $33,000,000,000. This includes $8,500,000,000 for industry, $12,000,000,000 for agriculture, and the rest for transportation, electrification and housing. Thus enormous sums are needed.

I have been often asked about Russia's ability to pay for goods sold to them on credit. Many more concerns, than already do so, would like to sell goods to Russia, but hesitate about the credit terms; and Russia is asking for more and more credit. I know much less about this matter than Wall Street does. To my knowledge all obligations have thus far been met, although I think that most articles are sold on terms that do not extend over one year. However, the General Electric Co. has extended a five-year credit on one of its recent contracts. Foreign countries are extending big loans at long terms. At a banquet given to me in Moscow by party leaders, one of the latter in a speech made the following statement:

"We buy where we get credit, and where we can sell."

The Russian press constantly reiterates this statement and has directed many tirades against America for excluding, or threatening to exclude, pulp wood, manganese ore, etc.

As far as I could tell the Russian Government is a stable one. There are no signs within my knowledge of a disintegration of the system. Last year a bumper harvest was secured and while a good one will be obtained this year, it will not be up to expectations of last spring. Many new industries are running and more are being completed all the time, and as they proceed they earn dividends for the government. Some of them limp along but more experience is gained in their operation all the time.

The O. G. P. U. keeps a firm hand on matters and the army is well equipped to back the government up. I imagine that at the moment at least, any nation would hesitate to come to grips with Russia. Last May 1 one of the greatest parades of soldiery in peace time passed in review before Stalin. He took the salute for the first time. Previously Vorishillov, the army and navy leader, received the honor.

These are only random impressions. Just how much light they may throw upon Russia's credit position, I do not know, but they possess some significance.

(To be Continued)

TULSA, Sept. 12.—Test of east of the Raymond pool, of Rice county, Kans., is being abandoned after testing the Siliceous lime, which produces in the Raymond pool. That formation was had at 3319-75 feet and resulted in a hole full of water. Location is in the NW corner of 33-19S-9W.

ADVERTISING PAGES REMOVED

ROAD OILS

By Dr. George M. Mullins*

Article 2

(Article 1 appeared in the Aug. 12 issue)

OILED Road Construction Methods; Mixed-in-Place; Blotter Type; Surface Treatment; Elimination of Water in Subgrade; Shoulder Construction

OUR ideas concerning road construction have changed materially in recent years. Certain types of roads were formerly known as *permanent* roads. The idea of building permanent roads has been superseded by the idea of building the best temporary road allowable by the funds provided, holding in reserve sufficient funds for maintenance so the road will be as good or even better a few years later than it was the year it was built.

It may be good engineering, but it is not practical engineering, to build roads of the permanence of the famed Roman roads. Such roads soon outlast their usefulness, and the extra money and labor involved is wasted. Some of the streets in some of the European cities were bad enough for carriages, but it is hard to imagine enjoying a drive in a modern vehicle at a modern speed over a tortuous cobblestone pavement.

Permanence is not synonymous with serviceability. In fact, from the stand point of a highway commission, whose duty is to insure continuous, safe and rapid traffic between the places desired, good roads that can be maintained and rebuilt at a nominal cost are more desirable.

Permanence in some cases is uneconomical. Some mountain roads cannot endure over two or three years of erosion, and high type improvement of such roads is not justifiable. Even though the road itself is impervious to erosion, the foundation may be washed away. Fig. 2 is a striking illustration of road failure caused by erosion. Routes are changed, moreover, and centers of population change, thereby necessitating new roads.

Methods of construction and the material used, furthermore, become obsolete. Types of roads lose their popularity. With the change in highway commission personnel due to political governance it is possible that new policies and new types of road construction will be adopted each year and even new routings are often decided upon.

The trend, then, seems to be toward a temporary, low initial-cost road reserving appropriations for upkeep and renewal. This tendency has run countercurrent to the federal aid plan up to this year; but now federal aid includes oiled roads and maintenance. Such appropriations were for the initial cost of construction and not for maintenance when in reality good secondary roads must be developed by years of maintenance and cannot be perfected without allowing traffic to show up the defects that must be rectified.

*Skelly Oil Co., El Dorado, Kan.

This point is important in that the change of method of making federal aid appropriations should give considerable impetus to secondary road development and should help in meeting the needs of secondary road development.

Federal aid for secondary roads has been so arranged that from now on all the money need not be spent on the original construction but part may be prorated to take care of maintenance, which on oiled roads might be more properly called completion. The road construction fraternity and the governing bodies supplying the funds are being brought to realize that road building is a gradual development, paved roads being excepted. Paved roads are reversed in this matter. Their peak of condition is the first year and they retrogress; the type of secondary road construction now popular, continually improves and rises toward a higher peak each year if proper care is given it. This should be realized by all concerned with this type of road improvement.

In planning a road program to be built as suggested above, it might be well to take cognizance of the statement made by D. C. Thomas at the Eighth Annual Asphalt Paving Conference in 1929, who said that the success of an earth road is 90 per

Fig. 1—Method of reinforcing shoulders of oiled roads to prevent raveling

Fig. 2—Result of erosion on an improper road foundation. (Photograph courtesy of Kansas City Times)

cent preparation of the earth surface and 10 per cent the kind and amount of road oil put upon the surface.

Provided the oil has sufficient binding qualities as shown by the certain tests, this statement is undoubtedly true. It is, however, an important consideration that certain oils work better under certain methods of road construction and under certain climatic conditions. This will be brought out as the subject is developed.

Before going into the discussion of the types of construction of oiled roads, it might be well to recall the function of road oils in road construction so they may be used to best advantage in construction and maintenance. A distinction is sometimes made between asphaltic pavement and asphaltic concrete, both of which ultimately evolve out of oiled roads.

If a sand admixture is used, the road is known as asphaltic concrete; and such a road is made by using asphalt and mixing it with the gravel or crushed rock and sand. An oiled gravel and sand road evolves into an asphaltic concrete road if properly cared for each year for a number of years. Unfortunately changes of policies or appropriations usually prevent the completion of such a road.

Asphaltic pavement is the same as asphaltic concrete except no sand is used, and it can be built by the road oil evolution method or by the use of finished asphalt. The American trait of wanting things without delay, however, usually makes it insistent that such roads be built with asphalt and not developed with road oils.

The function of road oils is usually considered two-fold; viz., to bind the aggregate and to prevent dust. Road oils do serve those two purposes; but they accomplish more than that. The first use of such oils was in competition with calcium chloride to lay the dust, and their ability to bind the aggregate together and give a firm road bed made them more desirable.

As well as being a binder in dry weather to prevent crumbling and dusting, road oils serve as a waterproofing material in wet weather, keeping the roads open and safe for rapid traffic without as much slipperiness as is found on some more costly construction.

The waterproofing property of road oils is important in another manner. A large percentage of roads from the most rudimentary construction to the most meticulously prepared cement pavement fail because the subgrade soil or base fails. Everyone can recall pavement failures that seem to be caused by local settling of the concrete.

Asphaltic oils prevent subgrade failures by preventing capillarity. Moisture continually rises through the tiny crevices between the particles of the earth's surface. This moisture has a solvent effect on some particles. Other particles become swollen by absorbing the moisture and shrink again when evaporation takes place due to temperature and humidity changes. Frost does tremendous damage to road bases that are susceptible to capillarity.

Naturally the elimination of most of the water in the subgrade would eliminate such failures. An application of a priming coat or two to the subgrade will fill the capillaries or voids with asphalt, thereby making the base impervious to moisture penetration and allaying local settling. Even pavement foundations could be greatly improved by treating the foundation before the top is put on and irreparable loss could be prevented.

Because it is a shorter haul and, therefore, cheaper and easier, the material for the grade is usually taken from the side of the road leaving a ditch which fills with water and endangers the grade. Waterproofing such a grade with road oil would soon pay for itself in preventing future repairs.

The idea of road construction being a gradual development has been stressed considerably throughout this discussion. Natural consolidated asphalt requires years for formation. In asphalt roads the asphalt is unconsolidated. The slow development of asphalt roads by road oils gives a better opportunity for consolidation. By consolidation is meant that the rock forms the framework which absorbs the asphalt analagous to a water-soaked sponge in which the water corresponds to the asphalt and the sponge corresponds to the rock.

It can be easily seen that the asphalt in oiled roads is unconsolidated. It is apparent also that by flowing the asphalt into the aggregate bed by means of a solvent rather than by coating the aggregate with molten

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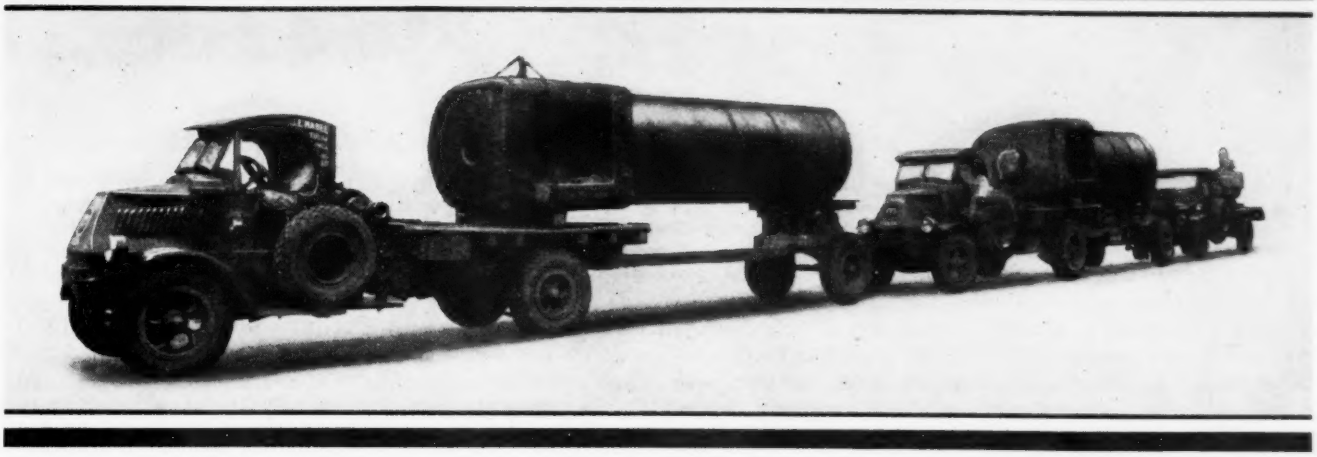

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Fig. 3—Road oiling in Kansas by the blotter type method. Distributor has just finished spreading a first coat of 0.5 gallon per square yard. A second prime coat had to be added the next day. In this case the aggregate was scraped to the side of the road and spread over the Kansas A-O-1 oil later and Kansas A-O-2 was applied and a light coat of gravel added and the whole bladed to proper form. Light streak at left is where oil has not yet penetrated

asphalt there is a greater opportunity for consolidation as the oil will flow into the porous parts of the aggregate and thereby become partially consolidated in the rock and strengthen the binding properties through exerting a greater grip on the aggregate particle. It is somewhat damaging to heat asphalts to a temperature that will allow the fluidity attained by road oils at application temperatures. At most, very little consolidation is to be had, but an effort should be made to obtain as much as possible to strengthen the bond of the road bed by selecting the proper road oil for that particular aggregate or soil.

With the functions of road oils and proper selection of aggregate thoroughly in mind during the construction and maintenance, an asphalt pavement should be developed in four or five years that will have an unusually easy riding surface, comparable to concrete pavement and devoid of the annoying joints between the slabs that sometimes give a concrete pavement a bumpy surface for fast driving.

Asphaltic oils also help prevent the loss of aggregate. Gravel will work into the subgrade and away from the road surface under the traffic load. Most roads lose from one to two inches a year. Some types of clays will not hold gravel at all and the aggregate must be replaced yearly. This surface loss is reduced greatly by using road oils to hold the aggregate on the surface and to harden and imperviate the subgrade. On roads where the aggregate loss is high, road oils readily pay for themselves in this one feature alone.

In actual construction the problem of detours is pertinent. It is not always necessary to close a road under construction if the construction is of the oiled road type. This is an important item sometimes from the standpoint of the cost of building and maintaining the detour and from the standpoint of the effect produced upon the travelling public. It must not be forgot that it is the duty of a highway department to insure continuous traffic as well as safe, rapid and agreeable traffic. If it is possible to build a road without the use of a detour, and it is possible with most secondary roads, that should be done.

Last Autumn traffic was detoured about 85 miles over a particularly dusty, rough, and otherwise disagreeable route in one state while ten miles of the main highway were repaired. It was amusing, if one were not a native or had not been over the detour, to listen to each person give vent to his feelings as he came back onto the highway and to make a quite definite declaration that he had made his last trip through that state. The author was one who made some such statements with the proper masculine punctuations. Traffic cannot be interrupted for long, and detours should be avoided if possible. Road oiling does not necessitate the elimination of traffic in many cases, and then for only a short time.

Shoulder construction is another item of highway construction that should be given more consideration than it usually is, particularly when planning the type of construction and putting on the crown. Certainly with concrete pavement it would be impossible to finish the shoulders in the same manner as the wearing surface of the road is finished, but some sort of finish is required that will bear traffic in case of necessity.

One such highway in the Middle West has large signs DO NOT DRIVE ON SHOULDER with white crosses marking the death spot of those who had to disregard the sign in case of emergency. The traffic will continue on the main part of the road if it is posisble, but shoulders should not be death traps in case that is not possible. Those highways should have shoulders built so vehicles could travel on them without undue danger. An oiled clay or gravel shoulder smoothed off at an angle that is not too great would have eliminated many of the white crosses mentioned above. Such construction would not induce wear on the edge of the road itself.

With an oiled gravel or macadam or dirt road the situation is somewhat different and not so easily disposed of. The weak-

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Fig. 4—Continuation of road shown in Fig. 3. Here aggregate has been windrowed to center. Prime coat at left was laid on an old gravel road. Aggregate was bladed off to give a bond between it and dirt fill and allow penetration to eliminate capillarity

est parts of the road in these cases are the edges and fraying is induced by shoulder driving. Nevertheless for the sake of the travelling public and industry, the shoulders should be well finished. Probably more maintenance will be required as the traffic will not pack the edges as it does the center.

The edge of the road should be reinforced by a V-shaped ditch filled with aggregate and heavy oil. This ditch should be one-half again as thick as the road bed and the shoulder should be smoothed from it for occasional emergencies. The feather edge should be on the shoulder and beyond the edge of the maricopa or reinforced edge.

The suggestion can best be shown as in Fig. 1 where the edge of the road is the ditch of road surface at the inner edge of the shoulder. The oiled shoulder would help waterproof the fill and permit occasional traffic with safety.

A feather edge is apt to ravel, so the edge of the crown should be reinforced. In doing so, however, the safety factor should be considered and the shoulder of the road oiled beyond the maricopa which should be so placed that except in extreme emergency no vehicles would go farther over on the shoulder. The shoulder should not be too steep. Of course, it is to be remembered that the amount and kind of traffic determine the amount of care to be given the shoulders; but for federal highways such care should be possible.

Proper treatment of shoulders is an important consideration in planning construction for another reason. Properly oiled shoulders save maintenance as dirt is not carried on the finished surface of the road. A well prepared oiled surface may become the base for a mud resurfacing in wet weather if the traffic is allowed to carry the muddy shoulder onto the road.

The same situation is true when dirt side roads are not oiled. All travelled side roads should be oiled for a distance of 75 or 100 yards off the road to preserve the road in wet weather.

The actual construction of the road bed itself is a matter for the highway engineer. It does seem in order, though, to suggest that besides good drainage the subgrade needs treatment to prevent capillarity or damaging water seepage up through the grade. This point will be touched upon again when the discussion of the choice of oil and of aggregate is presented.

After the foundation for the crown has been prepared, the methods of construction vary widely; but all of them are attempts to build a crown of aggregate uniformly bonded by asphalt and uniformly compacted with the various sizes of aggregate in the places where they can best take their proper share of the wear and force.

It is unwise to put the crown on immediately after the road bed is finished. At least one year of traffic with a prime coat of road oil should be allowed. A year of normal traffic will compact the fill and, more important, bring out the local failures that will be costly to repair later and will mar the perfection of the finished road. Proper compaction is very important.

An illustration of what is meant can be had from the South Dakota roads. Some wise highway engineer routed the highways in such a manner that they go near and serve nearly all the towns of the state but go through very few of the towns, which, of course, obviates slowing up of through traffic and eliminates much danger of accident. The grades were built and a year or two, in some instances several years of traffic were allowed to compact and show up flaws which were repaired. Then the roads were all gradually graveled.

They have been worked each year mostly by blading periodically, and lost gravel has been added. Some of the road beds are so old that all the failures that are going to show up in a reasonable time have already shown up and been properly reconstructed. Gravel has been worked into some of the roads

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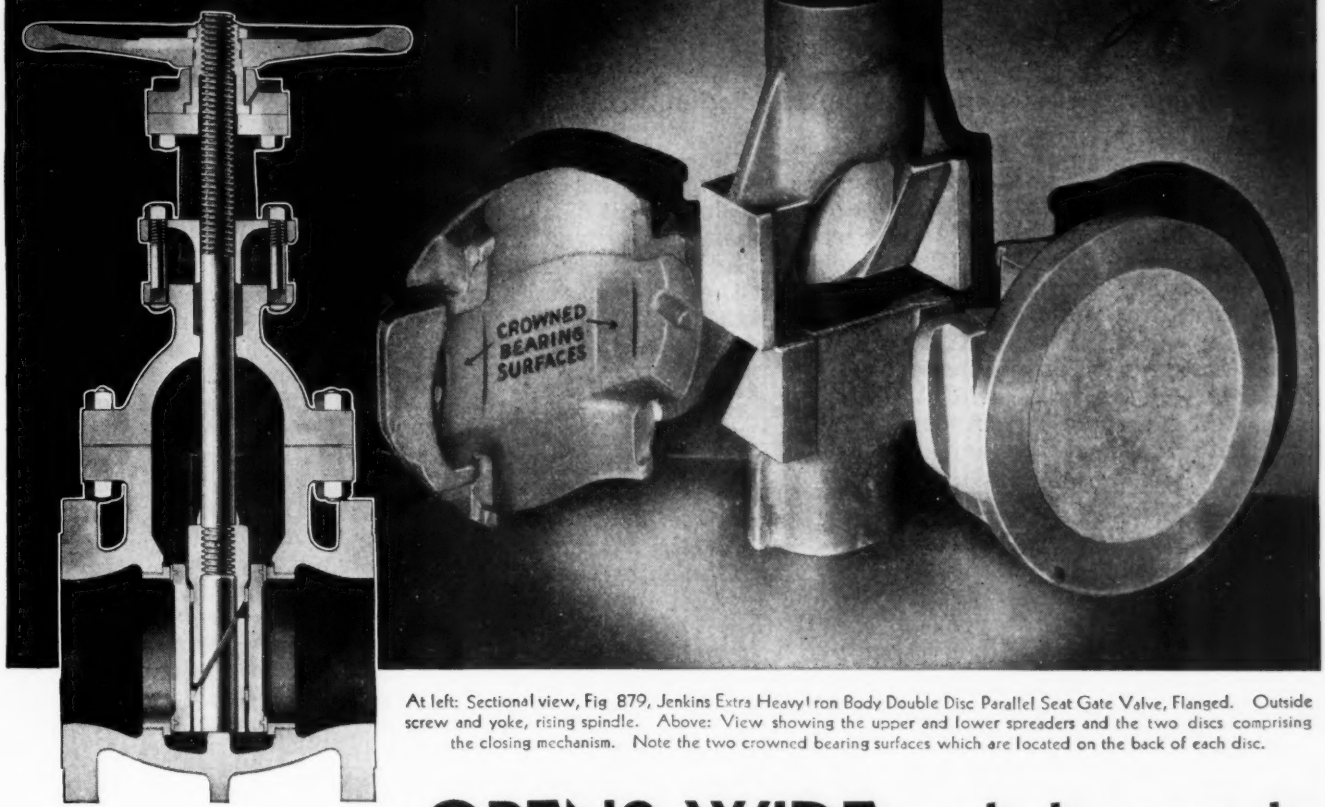

At left: Sectional view, Fig 879, Jenkins Extra Heavy Iron Body Double Disc Parallel Seat Gate Valve, Flanged. Outside screw and yoke, rising spindle. Above: View showing the upper and lower spreaders and the two discs comprising the closing mechanism. Note the two crowned bearing surfaces which are located on the back of each disc.

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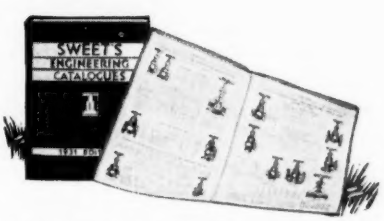

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for six years or more giving the base an unusually firm foundation.

The only difficulty with these roads has been a lack of means to hold the aggregate from crowding into rows six to ten inches deep leaving the tracks bare and dusty in dry weather. With the road oiling program now in progress there is no reason why South Dakota should not have a perfect road system. Disagreeable roads in South Dakota some two or three years in the future can be attributable only to about 80 per cent improper or lack of maintenance and 20 per cent improper choice of oil for their arid climate and extremes of temperature with the seasons.

When the road bed has shown itself to be satisfactory and ready, the crown may be laid by three methods or combinations of the three; namely, surface treatment, blotter type, or mixed-in-place.

With all three types of finish the supports must be thoroughly dusted before being oiled or before the oiled aggregate or the aggregate that is to be oiled is put on.

The West Coast and moist regions seem to favor the surface treatment as it will allow for heavier materials for the top of the road carpet and makes the roads passable in wet weather. Surface treatment is just what the name implies; a heavy oil, hot enough to be fluid, is sprayed on the surface of a new or a pretreated aggregate bed. It is more a finishing coat and, therefore, ought to be placed on a firm base of well-bonded material or preferably an old oiled road to get good bond or union between the layers.

One difficulty with this type is that there is the possibility of a filtering effect leaving the heavy asphalt on top while the lighter oils penetrate if the base has not been properly prepared by oiling some years before. The claim has been made that surface treatment gives a better riding surface than mixed-in-place as the surface treatment is designed to be a pavement-like finish placed on a better grade probably developed from macadam or a well-compacted oiled road foundation. It is a finishing treatment in the development of a perfect road. The treatment is often called the finishing mat or carpet coat.

Sometimes a surface treatment becomes a partial mixed-in-place method in that the old surface is scarified for two to four inches, worked, and oiled with a heavy oil to seal the surface. The heavy oil of the surface treatment prevents the moisture in the subgrade from rising to the surface and forcing a lighter oil out, which phenomenon is known as bleeding.

Either traffic or a roller may be used for compaction. The loose material is bladed to the center and the prime coat of 1/3 to ½ gallon per square yard is added. After twenty-four hours the aggregate is added and leveled into place one-fourth to ½ gallon of heavier oil is sprayed over the crown and compaction allowed. Some mixing is done by the blading as in the mixed-in-place. Much of the oil is carried away by traffic so a light coat of aggregate may be added to prevent this.

It is not always practical to lay the prime coat very long before the final treatment; but if it is possible the grade and subgrade will be stabilized and weaknesses can be corrected. The priming coat is indispensable for giving a bond between the foundation and the surface coat. Low viscosity oil is usually used for the prime coat; but high viscosity oils and cut-backs are used for the crown. (Cut-backs are asphalts made fluid for oiling purposes by solution in about 20 per cent kerosine).

Mixed-in-place treatment is generally used on newer construction. The base is prepared and swept. The prime coat is very often omitted; but it has the same definite advantages in regard to the fill and the bond between it and the crown is better if a prime coat is used. The aggregate is placed in windrows on the side of the road or in the middle. One-half of the road may be worked at one time to prevent interruption of traffic.

The aggregate and oil are mixed and worked by discing and blading until all of the aggregate is uniformly covered. From ½ gallon to 2 gallons of oil per square yard is used, depending upon the amount and kind of agregate. Repeated blading and windrowing with additions of oil or aggregate as needed soon brings the mix to uniformity. Then the road is smoothed and the irregularities ironed out as compaction is made by traffic. Heavy traffic at this stage is desirable.

A machine is being developed that facilitates the mixing by picking the aggregate up from the window and mixing with a uniform amount of oil and spreading the oiled aggregate behind it as it goes. This type of construction originated in 1923 and the mix was sometimes made in plants, but that plan is not very satisfactory and is too expensive. Naturally high viscosity oils are required and cut-backs are found to be very applicable to this type of construction. This type of construction usually includes rolling in the East but the Middle West relies upon traffic.

The blotter type of construction that is becoming so popular in the Middle West is an adaptation of the *multiple lift* asphalt pavement construction. A prime coat of oil is placed on the base and the aggregate added in a thin coat. When some compaction has taken place and the aggregated layer had blotted up or absorbed the oil, more oil is added and covered with a new layer of aggregate. This treatment is repeated until the desired thickness is obtained. It is apparent that a light oil is required in this case, otherwise the aggregate could not blot it up.

All three types of construction depend upon a good waterproof base with good drainage, uniformity of mix or a proper distribution of the road oil (analogous to varnish coating, the depth of penetration is relatively unimportant compared to the uniformity of penetration), a minimum of capillarity a good bond between the base and the crown, and compaction. Compaction and the amount of traffic is more important than is usually realized.

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A choice in methods of construction depends upon the type and state of development of the road. The blotter type is used for the first preparation. A mixed-in-place could be used to salvage an old oiled road or macadam. A surface treatment is a finishing coat.

Continuing the idea that the best roads are developed slowly over a period of years, it might not be out of order to make the following suggestions: The routes should be well planned and as permanently planned as is feasible. The subgrade should be constructed and good drainage secured. Next the fill should be brought into shape and a year or two of normal traffic be allowed to show up the imperfections and to compact the base. Then the base should be primed early in the spring with a light oil and this repeated in the fall.

This should give a firm, well-bonded, waterproof foundation that will prevent capillarity of water in the subsoil and ditches from forcing the surface oil out in the form of bleeding and that will bond with the later finish and yet prevent a loss of aggregate by the natural pressure of the aggregate downward under traffic load.

While this state of construction is in progress, the traveling public will be enjoying the normal oiled earth roads which are superior to ordinary earth roads if normal maintenance is provided. The following year a prime coat and a blotter treatment should be given. Under some conditions perhaps two light blotter treatments should be made. A year or two of traffic would place the road in condition for a heavier aggregate and a heavier oil applied by the mixed-in-place method.

Proper maintenance and light treatments of oil every other year would evolve in a few years a smooth-surfaced, all-weather road of equal if not better finish than a concrete pavement, and it will have more resilience and a better continuity of bed without the annoying joints or cracks. When the traffic warranted it, the surface treatment with cut-back asphalts could be applied to make the road able to support added traffic without a loss of serviceability.

It will be noted that this development takes many years giving a better road as the need and funds increase. While this road is being steadily improved, it is also furnishing a serviceable road at all times and should be used during all stages of construction. Unfortunately changes in politics and state appropriations and the former federal aid system has often made it imperative that such a road program be crowded into two or three years instead of ten or 12 years.

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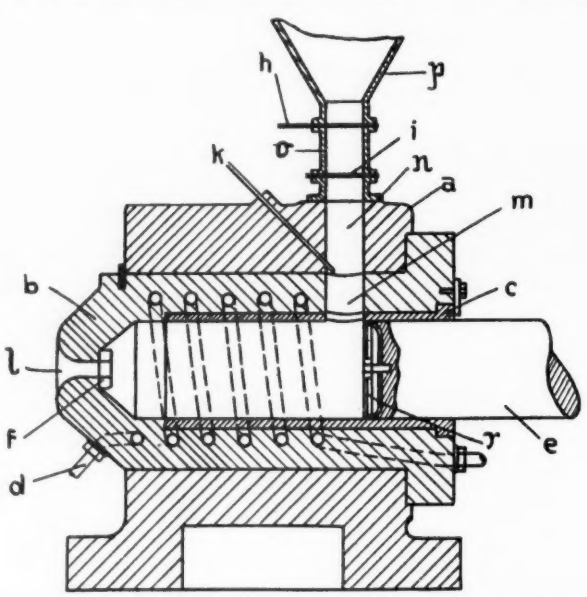
New Refining Patents

High Pressure Hydrogenation. U. S. P. 1 807 122, May 26, 1931, application filed March 10, 1930 and in Germany Dec. 16, 1925; Johannes Maruhn and Ludwig Tubben.

THIS invention relates to an improved apparatus for the destructive hydrogenation of fuels (powdered solid fuels or heavy oils) for the production of light hydrocarbons. Its principal contribution to the art lies in the use of a hydraulic press, with suitably designed compression chamber, as the pressure chamber for the hydrogenation.

The drawing shows a cast-iron body



a, with a steel cylinder *b* into which is inserted a working cylinder *c*, both cylinders being removable from the body. A heating coil *d* is cast into the cylinder *b*, for heating the reaction mass by means of a current of hot oil; the plunger *e*, fitting cylinder *c*, has at its end a steel packing and tightening cup *r*. Cylinder *c* serves as a sleeve in cylinder *b*, which is a truncated cone at its closed end and has there a passage *l*, of which the cross sectional area can be varied by two iron ledges *f*. When this passage is entirely closed, the reaction mass may be subjected to pressures of 1000 atm. or even more.

Oil or other fuel to be hydrogenated is fed into the apparatus through hopper *h*, connected by tube *o* to passage *m* in cylinder *b* and passage *n* in the body *a*; feed can be controlled in tube *o* by the slides *h* and *i*. The hydrogenating gas enters through passage *n* from pipe *k*. The new apparatus has advantages of safety, ease of operation, adaptability to either liquid or powdered fuels, and high efficiency.

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Producing lower boiling liquid hydrocarbons from powdered coal, heavy oils or mixtures of these, at high temperature and pressure of hydrogen gas, comprising feeding to a reaction zone a mixture of hydrogen-containing gas, carbonaceous matter and a catalyst, heating and gradually compressing the mixture in the zone to the maximum reaction pressure, and finally removing the prod-

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and
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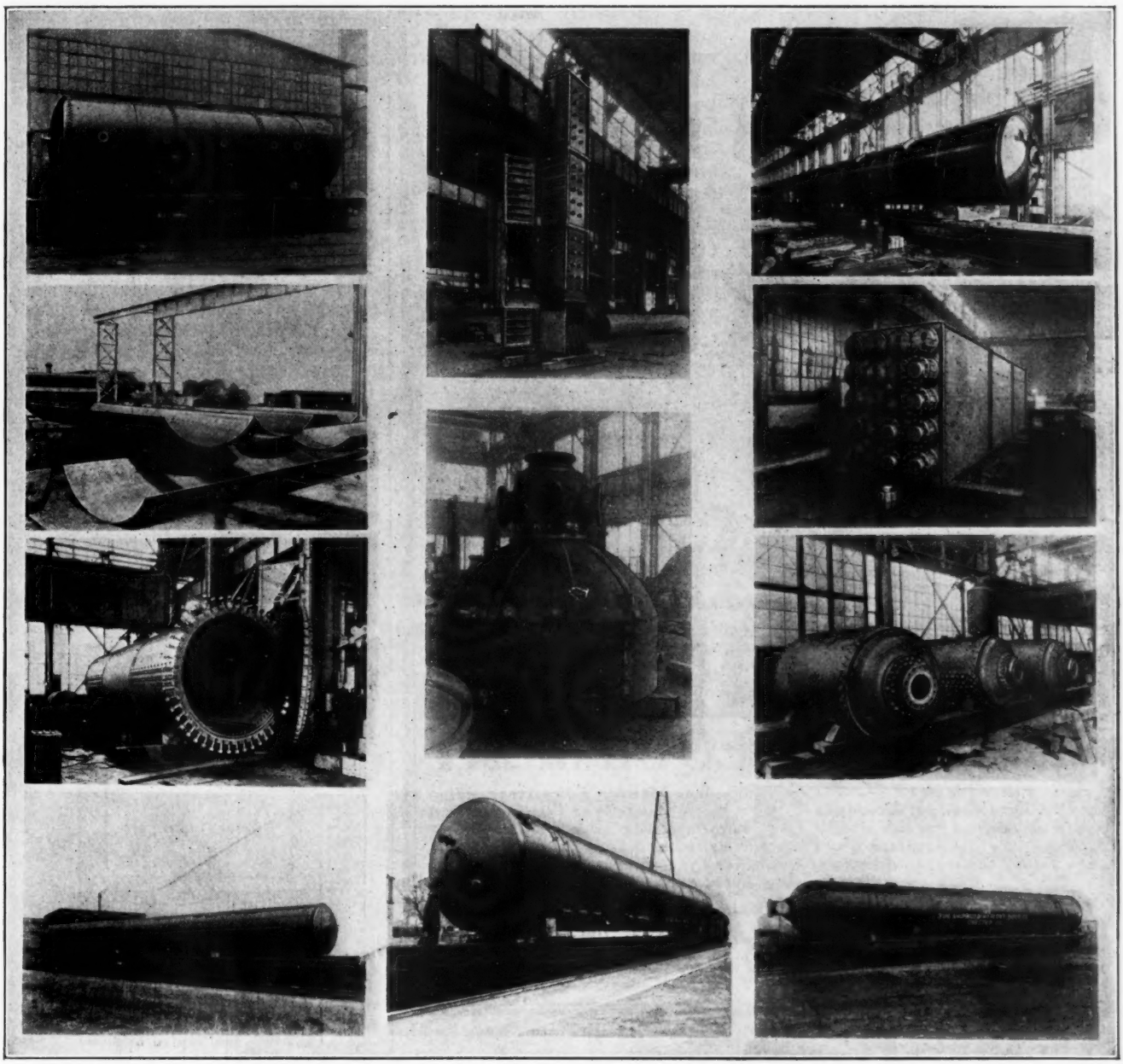

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Land or Water Shipments *Estimates on Request*

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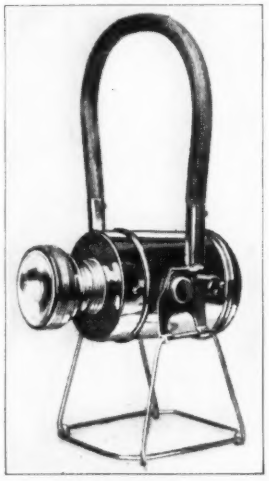

BRONSON ELECTRIC LANTERN

AT NIGHT . . . .

For tank gauging . . . . checking sight and pressure gauges . . . . for car unloading . . . . for working *safely* . . . . use a Bronson Electric Lantern.

Write for prices

E. B. BRONSON & CO.
Machinists — Contractors
Blue Island, Illinois

Clean large pieces this easier way!

NO matter how heavily encrusted with oil and muck steam pumps, rotary tables and other large pieces may be, a short boil in a tank containing an Oakite solution cleans them thoroughly. Practically no scraping or scrubbing is required.

For information on this and other money-saving Oakite methods, write and ask to have our nearest Service Man call. No obligation.

Oakite Service Men, cleaning specialists, are located in leading industrial centers of U. S. and Canada

Manufactured only by

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Industrial Cleaning Materials and Methods

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WAX PLANT EQUIPMENT

Filter Presses — *Wax Moulding Presses*
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Complete Wax Plants designed and built
Stills, Towers, Condensers, and other Oil Refinery Equipment
Oil Burning Systems

BETHLEHEM STEEL COMPANY, *General Offices: Bethlehem, Pa.*

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Design of Complete Wax Plants—Absorption and Compression Refrigerating Machines—Wax Distillate Chilling Machines—High Pressure Filter Presses—Paraffine Wax Sweaters—Heat Exchangers and other Refinery Equipment.

CARBONDALE MACHINE COMPANY, CARBONDALE, PA.
SALES OFFICES
New York Los Angeles Buffalo Chicago Pittsburgh Tulsa Kansas City Philadelphia Boston

uct from the reaction zone; and apparatus suitable for this process.

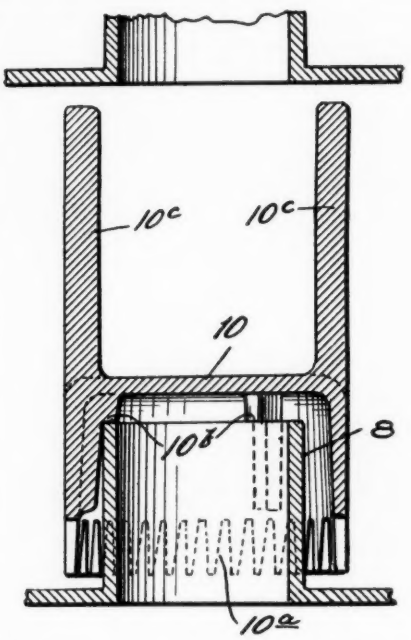
* * *

Bubble Tower Cap. U. S. P. 1 808-276, June 2, 1931, application filed Dec. 21, 1923; Henry E. Widdell, assignor to Gasoline Products Co., Inc.

IN A NOVEL construction for bubble tower caps, provision is made for accommodating excess vapor volume in the tower without causing the vapor to surge or blow over the liquid, and for promoting efficient separation of gasoline fractions from the heavier fractions of a petroleum distillate.

The separate pans of the tower have short risers serving as vapor passageways, and standpipes so placed as to regulate overflow of liquid from each pan to the next lower pan. The bottom of each standpipe is immersed in liquid to prevent diversion of vapor through these pipes.

The novelty of the invention lies mainly in the construction of caps covering the risers. The drawing shows a riser 8, covered by a cap 10 serving to reverse the vapor flow so that the vapor must bubble up through the liquid around the outside of the riser. Each cap has a dish portion, with serrated bottom 10a and shouldered lugs 10b which cause an annular space to be left between riser and cap. Each cap also has vertical horns 10c, which prevent the cap from rising so far under excess pressure as to be entirely displaced from the riser, yet allow sufficient movement to care for sudden pressure surges such as may be caused by entry of water or steam into the system.



What is Claimed

Caps for bubble tower vapor risers, comprising cap units having serrated lower edges, vapor risers upon which the caps are mounted, and means on the caps for automatically limiting upward movement of the caps and enlargement of the vapor passages.

HIGH ANTIKNOCK RATING

The best possible motor fuel from your cracked gasoline at lowest cost

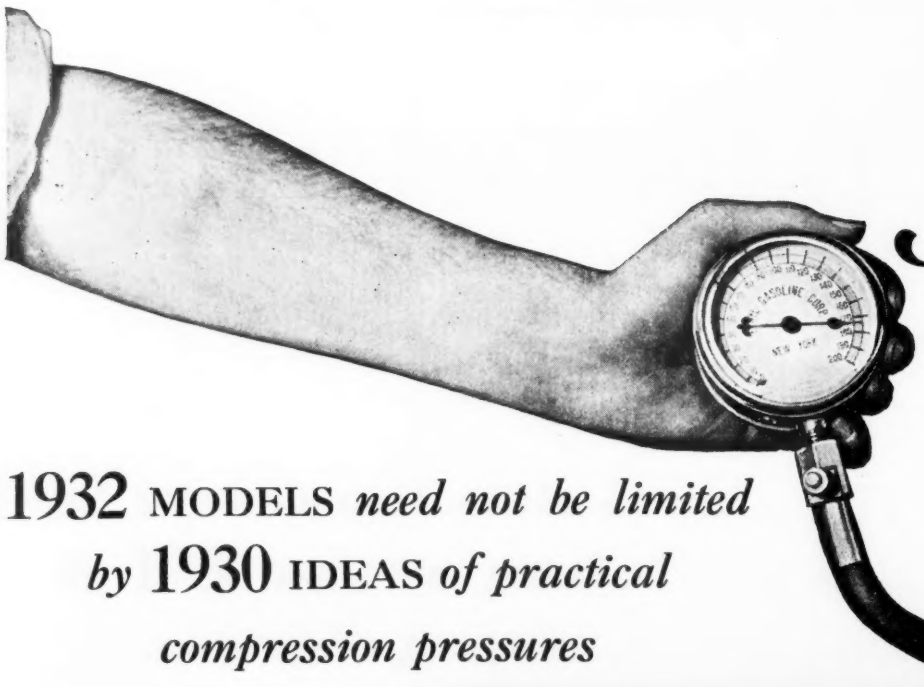
write us for details

LOW GUM

THE GRAY PROCESSES CORPORATION

961 Frelinghuysen Avenue

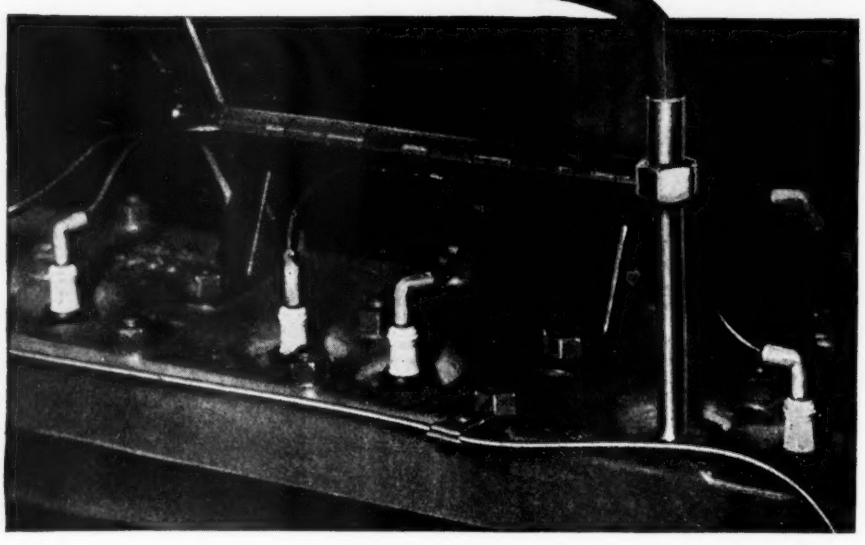
NEWARK, N. J.



How is

1932 MODELS *need not be limited by* 1930 IDEAS *of practical compression pressures*

175 pounds compression pressure — This photograph shows the pressure before ignition in a test car now operating satisfactorily on Ethyl Gasoline bought from roadside pumps.



▸ MOST automobile manufacturers have recognized the better performance of higher compression cars.

▸ But in building engines to develop this increased rear wheel torque many have increased compression pressures to such an extent that a fuel of Ethyl quality is required, *without* increasing it enough to take full advantage of such fuel.

▸ In so doing they have overlooked pressures which offer greatest reward.

▸ The present average compression pressure of 95 pounds should not be considered high. It is much more efficient than the pressures common a few years ago, but it is not nearly so efficient as higher pressures now made possible by the wide distribution of Ethyl Gasoline.

▸ Any car of compression pressure of 90 pounds or more is liable to knock on ordinary gasoline commercially available throughout the country. An engineer who designs an engine even of this limited compression requires the buyer to use Ethyl Gasoline or other fuel of equal antiknock quality to get maximum performance at all times. Once a manufacturer increases the compression pressure to a point where fuel of Ethyl antiknock quality is needed, it seems logical that he should design for the maximum benefit of the fuel.

▸ The minimum standard of Ethyl Gasoline now sold on every highway in the country is of sufficient antiknock quality to permit compression pressures considerably higher than the pressures developed in the majority of automobile engines today.

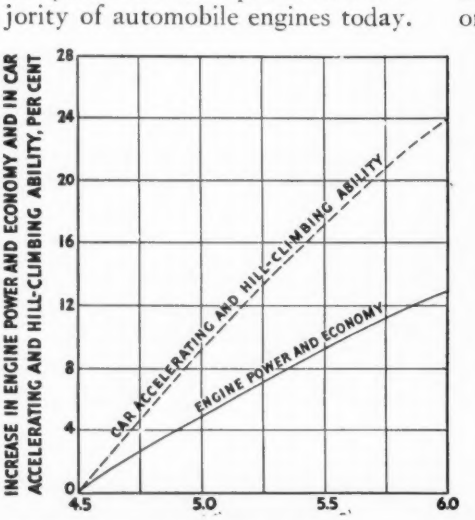


FIGURE 1

The solid line in Figure 1 shows the increase in engine power and economy to be expected from increases in compression ratio provided a suitable fuel is used. It is noted than an increase in compression ratio from 4½ to 1 to 6 to 1 increases engine power by more than 13%.

It is easily seen that the increases in car acceleration and hill-climbing ability shown by the dotted line are substantially greater than the increases in engine power resulting from increased compression shown by the solid line. Since the power required

Solid line curve shows per cent increase in engine power and economy due to increasing compression ratio from 4½ to 1 to 6 to 1. Dotted curve shows corresponding increase effected in accelerating and hill-climbing ability from the same increase.

HIGH

HIGH COMPRESSION?

to drive a car on a level road at any given speed remains unchanged, any increase in engine power is a net increase in reserve power available for hill-climbing and acceleration, and is a correspondingly greater percentage increase in actual car performance.

Figure 2 illustrates the amount of reserve power available for acceleration at different speeds on a level road. It is noted that, as the car speed increases, the high compression engine maintains a power reserve ample for sustaining cruising speeds up substantial grades and for passing slower vehicles with a large margin of safety. The low compression car, however, must labor up grades at reduced speed and await its chance to squeeze past heavy trucks with very little distance separating it from oncoming vehicles and disaster. Detailed explanation is given below the graph.

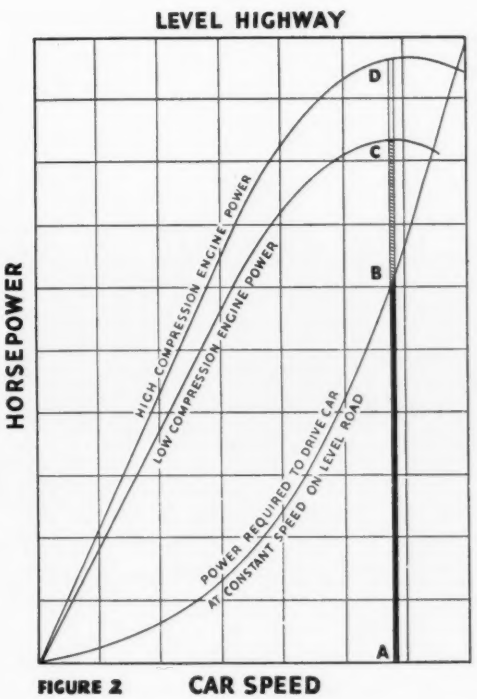


FIGURE 2

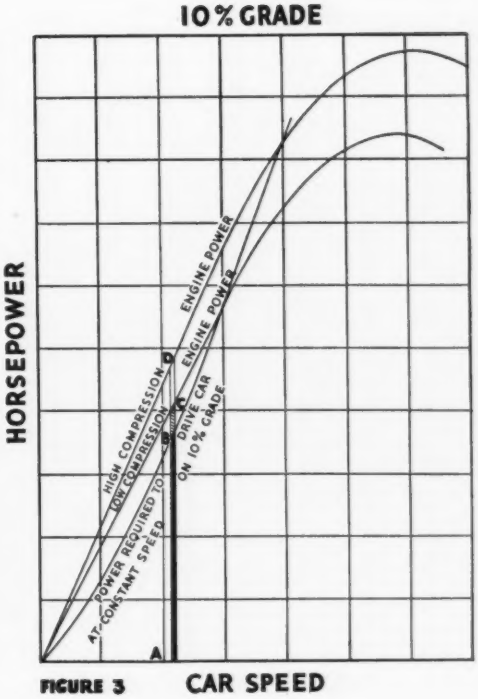


FIGURE 3

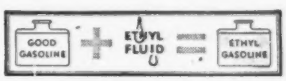
At any speed, line AB represents the power necessary to maintain that speed. Line AC represents the power which can be developed by the low compression engine at that speed, and line BC therefore represents the power available for hill climbing and acceleration. Line AD represents the power which can be developed by the high compression engine at the speed considered, and line BD therefore represents the power available for hill climbing and acceleration. The relative increase in power available is expressed by the ratio of CD to BC and is, of course, considerably greater than the relative increase in engine power, which is expressed by the ratio of CD to AC.

Figure 3 illustrates the amount of reserve power available for acceleration at different speeds when the cars are on a 10% grade. In this case the high compression car can maintain a considerably higher speed than can the low compression car, and at equal speeds has a very much larger reserve for passing other vehicles in complete safety.

Automotive manufacturers who design high compression engines to take greater advantage of the qualities of Ethyl Gasoline will excel timid competitors on many counts during the coming seasons. Higher compression pressures offer an opportunity to produce the power desired at lower fuel consumption with a lighter and less expensive power plant; or to develop outstanding superiority in economy and accelerating ability with the present power plant.

A large number of high compression cars are now in every-day operation. They are designed to take full advantage of the high compression pressures which Ethyl Gasoline makes possible, and their performance with respect to cars of standard compression is outstandingly superior. Your next year's models—how will they act alongside high compression design? Ethyl Gasoline Corporation, New York City.

ETHYL
ANTI-KNOCK
ETHYL GASOLINE CORPORATION
Controls Combustion



The active ingredient used in Ethyl fluid is lead.

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ETHYL GASOLINE

32,000 MILES
. . . and tire treads almost like New!

This Cities Service Oil Company Truck operates out of Canton, Ohio. It has never been late because of tire trouble!

THIS Cities Service truck equipped with ten Firestone Truck Balloons has gone 32,000 miles — that's 320,000 *tire* miles — with no time out for tire trouble. As you can see, the tire treads are scarcely worn. Many thousands of miles are still left — Miles that will still further reduce operating costs. Miles that will insure undelayed delivery.

Like Cities Service Oil Company you, too, can speed your trucks to sure deliveries by equipping them with Firestone Truck Balloons. The exclusive Firestone Gum-Dipping process and the two extra cord plies under the tread are but two of the Firestone features that assure you trouble-free service.

A test of Firestone Truck Balloons will show you what worry-proof truck mileage really is. The Firestone Service Dealer nearest you will tell you what equipment is best suited to your trucks and trailers. When purchasing new equipment specify Firestone Truck Balloons, Firestone Puncture Proof Tubes and Firestone Rims.

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Firestone
TRUCK BALLOONS

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One-stop station of the Southwestern Oil Co., Niles, Mich. Service entrances are on the side street, at the right of the picture

Four Service Stations Sell $200 Worth of Candy Each Week

By E. L. Barringer

N. P. N. STAFF WRITER

THE sale of candy, tobacco, soft drinks, and accessories at service stations is increasing profits of the Southwestern Oil Co., Niles, Mich., by several thousands of dollars a year.

When the company began operating in June, 1922, one of the original merchandising policies was to sell whatever customers would buy. Now the company is reaping the benefit of customers accepting the stations as more than a place to buy gasoline and oil.

Consequently, when soft drinks were added to the line this summer sales jumped immediately to the rate of two cases daily for each of the company's four stations in Niles.

What the sale of these lines of merchandise means is indicated by the company's wholesale bills. Last year, for example, the wholesale tobacco bill was $6000. The margin is about 20 per cent. Each week the wholesale candy firm collects about $50 for the goods sold through the company's four stations.

Candy, incidentally, is one of the original lines of goods sold. Only the popular 5-cent bars are sold. The company is not pioneering any new brands. It sells what the customer wants to buy.

The company found it had to concentrate on the few popular bars, and these were of the 5-cent variety. There was no profit in trying to sell customers something they did not want. Only wrapped bars are sold.

Success of candy sales has been in a regular turnover of stock. Purchases are made from the wholesaler in small quantities, but orders are placed regularly. Experience has proved that the maximum stock at a station should be $10, and that the stock should be turned over once a week. Fresh stock is necessary, especially in summer and with nut bar candy.

The box of candy of 24 pieces costs 70 cents and retails at $1.20, leaving a 50-cent margin.

All candy is purchased from the wholesaler, delivered to the oil company's office, and then re-distributed to the service stations. This method keeps stock uniform, and prevents a salesman calling on the station with the possible result of overloading it.

Cigars, cigarettes, smoking and chewing tobacco also were sold early at the Southwestern company's stations. All these add to the company's profits, with the weekly wholesale bill amounting to about $120.

Soft drinks are a new addition to the company's line of goods. Last summer experiments were conducted at one station, with the result that sales warranted installation of coolers at all stations this year.

Late in May soft drinks were placed on sale and the daily average turnover now is two cases a day per station.

Retail prices on soft drinks are 10 cents for near beer, and 5 cents for pop.

The margin of profit is 50 cents a case, costing 70 cents for 24 bottles and selling for $1.20. Then there is the expense of icing the coolers, 10 cents a day for a 25-pound cake

Figure 2308. Heavy Duty Fulflo Faucet.
For leakproof handling of oils, gasoline, kerosene, alcohol, thinners, and viscous liquids.

a twist of the wrist does all the work...

● Clogging and sticking of faucets are eliminated for handlers of liquids of all kinds who use the Barrett Heavy Duty Fulflo. A twist of the wrist opens the Fulflo Faucet to a full stream or shuts it off instantly without drip. Heavy hex and large shoulder provide a quick, leakproof connection. Seat washer is removable. Special non-corroding metal, of which the Fulflo is built, is resistant to hard usage and adverse weather conditions.

Outstanding features like these are built into every Barrett Oil Specialty. Each item in the Barrett line is made to make marketing simpler and faster . . . save time and patience . . . . turn waste into profit. You have a right to expect this standard of practical service in every oil specialty you buy!

◆

THE CLEVELAND BRASS MFG. COMPANY
4606-4700 Hamilton Ave.
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THE BARRETT LINE

Fulflo Gate Faucet	Compression Lever-Lock Faucet
Fulflo Barrel Faucet	
Ground Key Lever-Lock Faucet	Lever-Locked Hose Coupler
Radiator Fill Faucet	"77" Barrel Faucet

BARRETT
Specialties for the Petroleum Marketer
"STANDARD OF COMPARISON"

of ice for each station. The bottling company makes a charge for any appreciable shortages of 2 cents a bottle, but so far this summer the company has had to pay out only 36 cents for broken bottles.

Deliveries of soft drinks and ice are made direct to each station. The ice delivery is daily while the bottling company services the stations in Niles twice a week, and those in neighboring towns once a week.

This summer the company changed its policy on accessories with the opening of a new one-stop station near the retail business district on a main tourist travelled highway.

A line of accessories, including rim bolts, fan belts, lamps, spark plugs, and tire patches, have been carried always at the stations. With the opening of the one-stop station most of these lines have been transferred there, leaving only the faster moving lines such as lamps and wiper blades at the service stations.

As this is the company's first experience with one-stop service it is proceeding cautiously.

From 1923 to 1925 the company handled tires, but mail order house competition removed the profits, so the line was discontinued. Sixty days ago the company resumed the sale of tires, and plans are to add batteries to the line next month.

Although the company has not pushed its merchandising plans for the one-stop station, yet it is averaging about four jobs daily on car washing, and four on lubrication service.

The company has noted a difference in selling merchandise and in service, so the car washing and lubrication departments have received considerable attention. In car washing, for instance, axles are washed off by water under pressure, the under part of the fenders are brushed off, the interior of the car is carefully swept out, and in washing windshields and windows the entire glass is washed so when the window is put down there is no dirt on the top edges.

All this attention to detail is bearing fruit now. Customers are giving the company favorable publicity by telling their friends.

The men behind the Southwestern Oil Co., Niles, Mich. W. C. Winters, left, is president, and Ray Beland, right, secretary and treasurer

Carbon Causes "Knocks"

SELL THE NEW ANTI-CARBON VEEDOL MOTOR OIL

99.1% CARBON FREE

Carbon-crusted pistons prevent proper compression, cause pre-ignition and "knocking" . . . Carbon unseats valves, pulls down speed, cuts off power.

Why handle oils that invite carbon troubles, delays, repairs? . . . Sell the New Anti-carbon VEEDOL . . . 99.1% carbon-free.

Sell Anti-carbon VEEDOL . . . So clear and carbon-free you can read a newspaper through it. Sell Anti-carbon VEEDOL . . . 100% Pennsylvania made 100% better by new refining equipment costing $2,000,000 . . . Heat-proof . . . Cold-proof.

Sell Anti-carbon VEEDOL . . . Without a price-premium . . . with a full margin of profit.

A TIDE WATER ASSOCIATED PRODUCT

JOBBERS . . . DEALERS

What other motor oil offers you these advantages?

1 QUALITY . . . The highest viscosity index . . . the greatest fluidity at zero . . . 99.1% freedom from carbon . . . triple dewaxed . . . so clear you can read a newspaper through it.

2 PRICE . . . All of the new 100% Pennsylvania VEEDOL'S qualities are available to your customers without a price-premium.

3 ADVERTISING . . . More than twenty million dollars have been spent in the past 15 years for national and local VEEDOL advertising. The New VEEDOL line is now being advertised with heavy schedules in national magazines. A complete line of signs and dealer helps is also available to you without cost.

4 PROFIT . . . Tide Water's jobber and dealer proposition on the New VEEDOL oils is so attractive that you are assured of substantial profits on the sale of these lubricating oils alone. To say nothing of the plus gasoline business that this nationally advertised line of 100% Pennsylvania oil will bring you.

GENERAL SALES MANAGER
Tide Water Oil Sales Corp.
17 Battery Place, New York, N. Y.
Dear Sir:
We are interested in your jobber / dealer proposition.
Please have your representative call.

*Name*_____

*Street*_____

*City*_____ *State*_____

100% PENNSYLVANIA . . . MADE 100% BETTER

THE Bulk Plant illustrated above, built by Leader, consists of a Warehouse, a five-car Garage and eight Storage Tanks. All the materials used and all the labor were supplied by Leader.

Leader is always prepared to build one Bulk Plant or fifty Bulk Plants of any size or type, in any part of the country. The experience of Leader construction crews, supported by the ability of the Leader Engineering organization and the facilities of the large Leader plant, assure you satisfaction in advance.

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New Patents

Prepared by R. E. Burnham, patent and trade-mark attorney, 1343 H Street, N. W., Washington, D. C., from whom copies may be obtained at the rate of 20c each. State number of patent and name of inventor when ordering.

July 29, 1931

REFINING

Method of repressuring and flowing of wells—Robert E. Lee, Fort Worth, Tex. Filed Apr. 5, 1930. No. 1,816,260.

Drill for wells—William C. Starkey, Indianapolis, Ind. Filed Aug. 30, 1928. No. 1,816,549.

Drill-bit—Anthony E. Carlson, Los Angeles, Calif., assignor to Reed Roller Bit Co., Houston, Tex. Filed June 5, 1929. No. 1,816,568.

Drill-machine—Carter A., Gordon J., & Reuben M. Willis, Chanute, Kans., assignors to Willis Drilling Machine & Mfg. Co., same place. Filed June 28, 1930. No. 1,816,708.

Oil-well pump—John B. Hawley, jr., Minneapolis, Minn. Filed Feb. 10, 1930. No. 1,816,731.

Drill-stem—Paul Dobrinski, Makoti, N. Dak. Filed Nov. 23, 1928. No. 1,816,767.

MISCELLANEOUS

Method of coking petroleum residues—Alexander S. Knowles, Chicago, Ill., assignor to Tar & Petroleum Process Co., same place. Filed Feb. 12, 1927. No. 1,815,918.

Liquid-dispensing apparatus—Lyon McCandless and Jack D. Sartakoff, Rochester, Pa., assignors to Wayne Pump Co., Baltimore, Md. Filed Apr. 2, 1928. No. 1,815,926.

Storage-tank of the floating-deck type—John F. Patterson, Warren, Ohio, assignor to Warren City Tank & Boiler Co., same place. Filed Oct. 21, 1927. No. 1,816,124.

Dispensing apparatus of the visible type—Raymond W. Bond, Fort Wayne, Ind., assignor to S. F. Bowser & Co., same place. Filed Mar. 18, 1929. No. 1,816,513.

Fluid-dispensing apparatus — Leo Deutsch, Beaver, and George J. Genung, Rochester, Pa., assignors to Wayne Pump Co., Baltimore, Md. Filed July 18, 1927. No. 1,816,569.

Liquid-dispensing apparatus—Walter H. Parker and Frederick W. Delanoy, Rochester, Pa., assignors to Wayne Pump Co., Baltimore, Md. Filed Feb. 17, 1926. No. 1,816,609.

Liquid-dispensing apparatus — William S. Townsend, Rochester, Pa., assignor to Wayne Pump Co., Baltimore, Md. Filed Jan. 22, 1926. No. 1,816,623.

Liquid fuel for use in internal-combustion engines and process for production thereof—Wilfred H. Hoffert, London, England, assignor to National Benzole Association, same place. Filed Oct. 19, 1927. No. 1,816,811.

August 4, 1931

REFINING

Apparatus for treating hydrocarbons—Roy Cross, Kansas City, Mo., assignor to Cross Development Corporation, Wilmington, Del. Filed Jan. 20, 1926. No. 1,816,827.

Process of refining lubricating oils—Wirt D. Rial, Watson, Calif. Filed Feb. 13, 1929. No. 1,816,872.

Process of steam distillation—John G. Glasgow, Port Arthur, Tex., assignor to Gulf Refining Co., Pittsburgh, Pa. Filed May 11, 1926. No. 1,817,250.

Process and apparatus for producing light hydrocarbons—Horace Butler,

West Chester, Pa., assignor to Research Process Co. Filed Dec. 27, 1926. No. 1,817,672.

Process for the purification of benzenoid hydrocarbon oils—Paul Damm, Hindenburg, Germany, assignor to Koppers Co. Filed Aug. 30, 1930. No. 1,817,804.

PRODUCTION

Fishing-tool—Charles L. Van Amburgh and James R. Russell, Long Beach, Calif. Filed Oct. 31, 1927. No. 1,816,991.

Drill-stem—Erd V. Crowell, Los Angeles, Calif. Filed Feb. 26, 1929. No. 1,817,067.

Cement-head for oil-wells—Burt S. Minor, San Pedro, Calif. Filed May 17, 1930. No. 1,817,201.

Device for pulling or carrying sucker-rods—Allen R. Bumgardner, Peabody, Kans., assignor to Phillips Petroleum Co., Bartlesville, Okla. Filed Apr. 13, 1931. No. 1,817,233.

Feed for well-drilling tools—Walter N. Thompson, Huntington Beach, Calif. Filed Nov. 3, 1930. No. 1,817,467.

MISCELLANEOUS

Liquid pump (measuring type)—Robert S. Bassett, Buffalo, N. Y. Filed Dec. 13, 1930. No. 1,816,821.

Liquid-dispensing apparatus—Alfred L. Grise, Springfield, Mass., assignor to Gilbert & Barker Mfg. Co., West Springfield, Mass. Filed June 18, 1929. No. 1,816,900.

Liquid-dispensing apparatus—Alfred L. Grise, Springfield, Mass., assignor to Gilbert & Barker Mfg. Co., West Springfield, Mass. Filed June 18, 1929. No. 1,816,901.

Tank-car-cleaning apparatus—Marshall E. Byerley, Big Spring, Tex. Filed May 20, 1930. No. 1,816,954.

Lubricant-dispensing apparatus—Leland W. Pierce, Stockton, Ill. Filed Aug. 19, 1929. No. 1,816,987.

Tank-nozzle for swing joints and pipe-line connections—Tracy J. Calhoun, Cleveland, Ohio, assignor to Oil Conservation Engineering Co., same place. Filed Feb. 2, 1927. No. 1,817,029.

Emulsifiable lubricant—Elmer W. Adams, Hammond, and Francis W. Kittrell, Whiting, Ind., assignor to Standard Oil Co. of Indiana. Filed Sept. 4, 1928. No. 1,817,599.

August 11, 1931

REFINING

Preparation of adsorbents—Roy Cross, Kansas City, Mo., assignor to Cross Development Corporation. Filed Dec. 22, 1921. No. 1,817,968.

Method of treating petroleum hydrocarbons—Roy Cross, Kansas City, Mo., assignor to Cross Development Corporation. Filed Aug. 28, 1924. No. 1,817,969.

Reconditioning oils (refining mineral oils that have been used in oil-filled apparatus)—James G. Ford, Wilkinsburg, Pa., assignor to Westinghouse Electric & Mfg. Co. Filed Aug. 6, 1927. No. 1,818,218.

Hot filtration of decolorized oils—Paul W. Prutzman, Los Angeles, Calif. Filed Apr. 20, 1927. No. 1,818,274.

Process of making chemically-treated activated adsorbent material—Walter S. Baylis, Los Angeles, Calif., assignor to Filtrol Co. Filed Aug. 30, 1927. No. 1,818,453.

Method of and apparatus for treating crude oil—Herman Hoppe, Borger, Tex. Filed May 24, 1929. No. 1,818,480.

Process for refining hydrocarbon oil—Arthur L. Lyman, Berkeley, Calif., assignor to Standard Oil Co. of California. Filed Oct. 6, 1926. No. 1,818,488.

Oil vaporizer and converter—Cornelius B. Watson and Audley E. Harnsberger, Chicago, Ill., assignors to Pure Oil Co., same place. Filed Feb. 21, 1928. No. 1,818,512.

A big fleet of *modern* cars;
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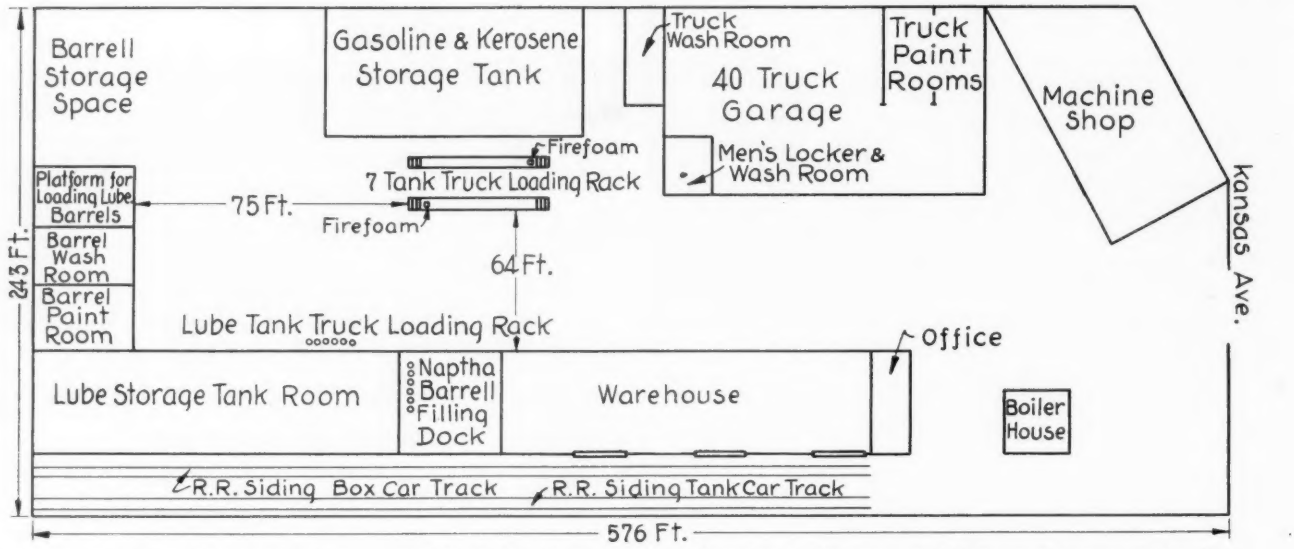

Sketch of ground lay-out at Armourdale bulk plant of the Standard Oil Co. of Indiana, Kansas City, Kan.

Ground Lay-Out and Dispatching System Eliminate Bulk Plant Delays

By J. C. Chatfield

N. P. N. STAFF WRITER

KANSAS CITY

THE modern city bulk plant which must move large quantities of petroleum products daily is one where good ground layout can do much to speed up delivery and hence cut down operating costs. Where cramped quarters impede speedy truck filling and dispatching, major investments in the plant often will pay good dividends.

The Armourdale bulk plant of the Standard Oil Co. of Indiana has been pointed to as an outstanding example of how ground layout can keep tank wagons and other automotive equipment moving with the least possible delay. Ample space has been left for maneuvering trucks on easy curves with no backing.

Loading equipment has been designed to provide fast filling of trucks. The method of truck dispatch also has been planned to eliminate lost time of drivers.

Returning to the plant from a trip, the tank truck driver checks in at the plant office with sales tickets. At that time he receives a loading ticket designating the products and amounts required for reloading the tank truck.

The driver then goes to the loading dock where the loader in charge re-checks the contents of the truck, if any, with the loading ticket. The tank truck is then loaded in accordance with the loading ticket.

The loader inspects faucet outlets to insure that they are marked to correspond with the contents of each compartment. Spring metal clips are used which snap on the outlets just above the faucets and are clearly visible to the loader when he connects the hose to make a delivery.

Before leaving the yard the tank truck stops at the plant office where it is re-checked as to correctness of the kind and quantity of products loaded and that outlet faucets are correctly marked.

Necessary paper work, aside from the final check-out of the truck is done while the truck is being filled. In that way a minimum amount of time is lost by drivers at the bulk plant.

To speed up the actual work of filling the trucks old small fill lines at the loading rack have been replaced by 3-inch and 4-inch lines. Nozzle control on the fill lines make it unnecessary for more than one man to work at loading.

The loading rack at the Armourdale plant is large enough to accommodate seven trucks at once. Raised concrete runways 36 inches wide, 3½ feet high and 56 feet long allow the loaders to move from truck to truck without lost time.

The rack was built without swing lines, the designers believing that loading time would be reduced by having fixed loading lines with nozzles directly over the tank truck domes. Gasoline and kerosine drop vertically from the nozzles through detachable, light metal downspouts which extend to a point near the bottom of the truck tank.

The company has never had a

fire at the loading rack and exercises great vigilance in fire prevention. The first duty of the loader when a tank truck is spotted at the loading rack is to ground the truck tank. A copper clamp attached to a copper ground wire is provided on the rack for each truck. When the truck is spotted the clamp is pulled down and attached to a metal knob on the truck tank. This is never removed until the truck is loaded and ready to move.

The copper ground wires are attached to a perforated copper can filled with charcoal which is buried deep enough to be in permanent moisture. All storage tanks at the plant are similarly grounded.

A foam extinguisher is installed in a frost proof cabinet on each of the two loading runways. At the base of each cabinet is a 100-watt light globe which is thermostatically controlled to light when the outside temperature drops to a point where the extinguisher might be endangered by freezing. The bulb gives off enough heat to prevent freezing.

Other extinguishers scattered through the plant are mostly indoors where this special heating arrangement is not necessary.

There is a special motor oil loading rack for these two trucks. As indicated in the accompanying sketch of the ground lay-out, this lube loading rack is across the yard from the light oil rack and adjacent to the lube storage tank room. The rack has six loading lines, one for each grade usually handled in bulk, and manifolded to the lube storage.

Loading of lubricating oils is done under pump pressure. Pumps used in unloading lubricating oils from tank cars are arranged so they may be used also as transfer pumps. Each of the 20,000-gallon, 4-compartment, lube tanks has its own rotary pump, direct connected to an electric motor. Each of the pumps is equipped with a by-pass arrangement so that, when the loading line valve is closed, the pump merely circulates oil until the motor is shut down. Lube transfer lines are 2½ and 3 inches in diameter.

The Armourdale bulk plant serves as a barreling station for lubricating oils sold by the company over a radius of some 200 miles from Kansas City. Less than car-load lot shipments and mixed car-loads of barreled goods are made up at the plant. The plant also serves all of greater Kansas City with lubes in bulk from tank wagon.

In order to carry on this work the plant is equipped to wash and paint barrels for refilling.

An important department at the Armourdale plant is that dealing with technical naphthas. On a dock between the warehouse and lube storage house is a loading rack for filling drums of special naphthas. Here less than carload shipments are made up for delivery over a large area. Naphthas flow by gravity to the drums. The drums may be moved across the dock direct to box cars or loaded on trucks for local delivery.

There are two switch tracks on the property. The track beside the warehouse and naphtha dock is used for box cars. Three box cars may be spotted on this track. The second track has unloading connections for four tank cars. The plant now is handling in excess of a tank car load a day of lubricating oils.

A machine shop at the plant is in charge of all major repair and upkeep work on Standard of Indiana trucks in the district. Trucks are overhauled and painted at the plant. There is a truck washroom attached to 40-car garage and one corner of the garage is fitted up as a paint room to handle two trucks at once.

A good many of the trucks operated out of the plant have been in company service for several years, bought before the days when pneumatic tires generally in use on heavy duty equipment. A new Kansas law bars solid tire trucks from the highways and the company now is installing pneumatic tires on the old trucks.

The old wheels are cut down with cutting torch and new rims are welded on. In the case of rear wheels there is very little of the old spokes left extending beyond the brake drums but the changes are being made without serious difficulties.

The plant operators find there is no serious effect on the operation of the trucks after the new tires have been installed. Clearances have been worked out without difficulty. Gear ratio changes are such that the trucks have a little more speed but the change has not been enough to

(*Continued on page* 75)

Truck Handles 9020 Gallons Daily

THIS 3070-gallon tank truck recently has been put in service by H. Halsted Park, Gulf distributor at Katonah, N. Y. It is used in hauling gasoline from a bulk water plant to an inland gasoline station 22½ miles away.

The unit carries 9210 gallons daily by making three trips, a total run of 135 miles. The truck is a six-wheel General Motors truck with a speed of 35 miles per hour. It is equipped with ten 9.75 by 20 truck balloons. The gross weight of the unit is about 40,000 pounds.

Compilation Of Mid-Continent Refinery Operations

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Mid-Continent Refinery Operations, Week Ended Sept. 11 (By Telegraph)

	Kansas	Oklahoma	North & Cent. Texas	West Texas	North La.-Ark.	Total Week Ended Sept. 11
Plants Reporting	10	23	23	10	10	76
Da. Av. Cap. (bbls.)	94,000	162,500	107,400	71,500	60,700	496,100
Da. Cracking Capacity	53,200	64,600	23,100	26,250	31,700	198,850
Da. Av. Crude Runs	66,700 — 1.4	127,476 + 3.2	68,481 + 9.3	32,855 + 32.2	47,718 — 10.1	343,230 + 3.4
Da. Av. Other Oil	7,554 — 19.8	3,379 — 24.5	2,102 — 12.9	60	18,299 — 7.2	31,394 — 12.9
GASOLINE – Gallons						
Stocks, Sept. 4	18,896,000	31,215,000	19,551,000	15,289,000	6,011,000	90,962,000
Prod. 9-4 to 9-11	12,807,000 — 4.3	21,255,000 + 4.4	10,511,000 + 6.2	3,440,000 + 41.0	6,388,000 — 12.9	54,401,000 + 1.9
Ship. 9-4 to 9-11	9,646,000 — 15.5	16,854,000 — 19.6	11,181,000 — 5.5	2,930,000 — 34.7	4,804,000 — 17.9	45,415,000 — 16.7
Stocks, Sept. 11	22,057,000 + 16.7	35,616,000 + 14.1	18,881,000 — 3.4	15,799,000 + 3.3	7,595,000 + 26.4	99,948,000 + 9.9
Ratio Sales to Prod.	75.3%	79.3%	106.4%	85.2%	75.2%	83.5%
KEROSINE—Gallons						
Stocks, Sept. 4	11,558,000	12,514,000	2,574,000	19,000	1,102,000	27,767,000
Prod. 9-4 to 9-11	1,768,000 + 12.0	2,529,000 + 1.2	1,055,000 — 28.7	22,000 +100.0	474,000	5,848,000 — 3.2
Ship. 9-4 to 9-11	3,444,000 + 71.4	1,413,000 + 35.3	709,000 — 47.7	24,000 +140.0	600,000 — 9.1	6,190,000 + 22.1
Stocks, Sept. 11	9,882,000 — 14.5	13,630,000 + 8.9	2,920,000 + 13.4	17,000 — 10.5	976,000 — 11.4	27,425,000 — 1.2
Ratio Sales to Prod.	194.8%	55.9%	67.2%	109.1%	125.6%	105.8%
STOVE DISTILLATE—Gallons						
Stocks, Sept. 4	2,107,000	13,411,000	165,000	79,000	37,000	15,799,000
Prod. 9-4 to 9-11	391,000 — 24.2	1,051,000 + 19.7	87,000 — 22.3	27,000 — 15.6	....	1,556,000 — 5.1
Ship. 9-4 to 9-11	444,000 — 28.4	1,151,000 + 86.5	150,000 + 54.6	29,000 — 42.0	18,000 — 79.4	1,792,000 + 21.8
Stocks, Sept. 11	2,054,000 — 2.5	13,311,000 — 0.7	102,000 — 38.2	77,000 — 2.5	19,000 — 48.6	15,563,000 — 1.7
Ratio Sales to Prod.	113.6%	109.5%	72.4%	107.4%	....	115.2%
GAS OIL—Gallons						
Stocks, Sept. 4	9,011,000	48,188,000	6,880,000	4,423,000	11,022,000	79,531,000
Prod. 9-4 to 9-11	928,000 — 19.7	143,000 — 93.6	548,000 — 52.5	500,000 — 18.6	2,567,000 — 15.7	4,686,000 — 43.0
Ship. 9-4 to 9-11	720,000 — 48.4	2,624,000 + 42.9	363,000 — 63.5	384,000 — 64.2	3,432,000 + 2.4	7,523,000 — 13.0
Stocks, Sept. 11	9,219,000 + 2.3	45,707,000 — 5.1	7,065,000 + 2.7	4,539,000 + 2.6	10,164,000 — 7.8	76,694,000 — 3.6
Ratio Sales to Prod.	77.6%	1835.0%	66.2%	76.8%	133.7%	160.5%
FUEL OIL—Gallons						
Stocks, Sept. 4	22,719,000	73,696,000	82,002,000	29,966,000	22,287,000	230,670,000
Prod. 9-4 to 9-11	5,724,000 + 3.8	7,698,000 — 3.7	6,050,000 + 9.4	4,162,000 + 74.4	5,528,000 — 7.4	29,162,000 + 6.5
Ship. 9-4 to 9-11	5,667,000 — 9.7	7,035,000 + 16.5	4,451,000 + 12.5	2,987,000 — 29.8	5,258,000 + 3.7	25,398,000 — 0.8
Stocks, Sept. 11	22,776,000 + 0.3	74,359,000 + 0.9	83,601,000 + 1.9	31,141,000 + 3.9	22,557,000 + 1.2	234,434,000 + 1.6
Ratio Sales to Prod.	99.0%	91.4%	73.6%	71.8%	95.1%	87.1%

Gasoline Produced by Various Methods, Week Ended Sept. 11

	Kansas	% of Total	Oklahoma	% of Total	North & Cent. Texas	% of Total	West Texas	% of Total	Louisiana-Arkansas	% of Total	Total	% of Total
Straight Run	6,878,000	53.7	13,956,000	65.7	6,692,000	63.7	3,026,000	88.0	3,312,000	51.8	33,864,000	62.2
Cracked	5,175,000	40.4	5,969,000	28.1	3,098,000	29.5	325,000	9.4	2,535,000	39.7	17,102,000	31.4
Natural	754,000	5.9	1,330,000	6.2	721,000	6.8	89,000	2.6	541,000	8.5	3,435,000	6.4
Total	12,807,000		21,255,000		10,511,000		3,440,000		6,388,000		54,401,000	

+ or — columns are % change from previous week.

Mid-Continent Gasoline Shipments Drop 8,900,000 Gallons

Staff Special—By Telegraph
TULSA, Sept. 14

GASOLINE shipments dropped 9,100,000 gallons in the week ended Sept. 11 at 76 Mid-Continent refineries reporting to this publication. The big drop was due at least partly to a lull in buying following the large orders placed just before the Labor Day holidays.

While shipments were falling refiners increased their runs of crude to stills 11,400 barrels daily average. This brought an increase of 1,000,000 gallons in gasoline production.

The combination of greater production and smaller demand forced reporting refiners to add 8,900,000 gallons of gasoline to inventories. Every group except north Texas added to storage.

Approach of fall caused more interest among buyers in kerosine, stove distillate and gas oil. Kerosine shipments were 300,000 gallons greater and refiners cut their output 200,000 gallons. Shipments of stove distillate increased 22 per cent. Gas oil stocks were cut 2,800,000 gallons. Fuel oil

Summary for the Month

Production and shipments, all reporting refineries, for four weeks ended Sept. 11. Change in stocks figures from Aug. 14.

GASOLINE

	Gallons
Production	219,422,000
Shipments	205,144,000
Net change in stocks	+14,278,000
Ratio sales to production	93.5%

KEROSINE

	Gallons
Production	24,669,000
Shipments	25,444,000
Net change in stocks	—775,000
Ratio sales to production	103.1%

STOVE DISTILLATE

	Gallons
Production	5,994,000
Shipments	5,992,000
Net change in stocks	+2,000
Ratio sales to production	99.9%

GAS OIL

	Gallons
Production	25,822,000
Shipments	27,817,000
Net change in stocks	—1,995,000
Ratio sales to production	107.7%

FUEL OIL

	Gallons
Production	116,020,000
Shipments	102,310,000
Net change in stocks	+13,710,000
Ratio sales to production	88.2%

did not follow the trend of other burning oils. Stocks of this commodity increased 3,700,000 gallons.

Ground Plan And Dispatching System

(*Continued from page* 73)

disturb the power factor.

A corner of the garage has been given over for a locker room, equipped with shower baths, lockers and tables which may be used by the drivers for their paper work.

The Kansas City division of the Standard of Indiana is under the management of J. W. Wilson. The division recently moved into magnificent new offices at 40th and Main streets in Kansas City. The new company office building, in the heart of the uptown section is built of white limestone and contains ample room for controlling the company's sales over the large agricultural region in Kansas, Oklahoma and Missouri.

Four States Have New Code Committee Members

NEW YORK.—Changes in the membership of several southern state code committees, announced by the American Petroleum Institute, include:

W. A. Jackley, South Penn Oil Co., Parkersburg, W. Va., appointed chairman of the West Virginia code committee, to succeed Crittendon Ford, resigned. J. C. King, Standard Oil Co. of New Jersey, Charleston, W. Va., succeeds Mr. Ford as a member of the committee.

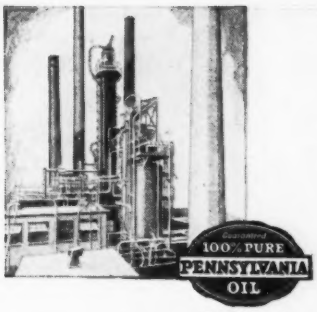
Fritz Anderson, Shell Petroleum Corp., Nashville, Tenn., who replaced D. B. Brueggeman, of the same company on the Tennessee Code Committee; and J. D. Flynn, Louisianna Oil Refining Corp., Little Rock, Ark., who replaced H. M. Gay, of the same company.

E. H. Collins, Standard Oil Co. of New Jersey, Columbia, S. C., has become a member of the South Carolina Code Committee, succeeding J. C. King, of the same company.

D. B. Johnston, Aetna Oil Service, Louisville, Ky., has succeeded Curtis Webb, of the same company, as member of the Kentucky Code Committee.

Oil Man Returns From Europe

CLEVELAND, Sept. 14.—A. W. H. Jamieson, president of The Cincinnati-Vulcan Co., Cincinnati, O., who has been in the oil business since 1892, visited 10 countries this summer while in Europe. These countries included France, Belgium, England, Ireland, Scotland, Germany, Holland, Italy, Austria and Switzerland, according to S. L. Beck, manager of tank car sales at Cleveland for the Shell Petroleum Corp., St. Louis.



Permit No. 31

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He was expressing the satisfaction of more than 700 oil jobbers who market our 100% Pennsylvania Motor Oils under their own brand name or one of our brands and make the handsome margin of profit that goes with it. We would like to supply you, too. The growing insistence among motorists for Pennsylvania Oil cannot be downed and our proposition will enable you to meet this demand in a most profitable manner.

We'll make up motor oils (Sharples Process) to your own specifications. Or if you prefer we'll recommend tested specifications of this 52-year-old organization. Shipments can be made as quickly as you like in tank cars, compartment tank cars or carloads of barrels or drums. Your request for full information and quotations will receive immediate attention.

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650 Steam Refined
600 Flash Steam Refined
630 Flash Steam Refined
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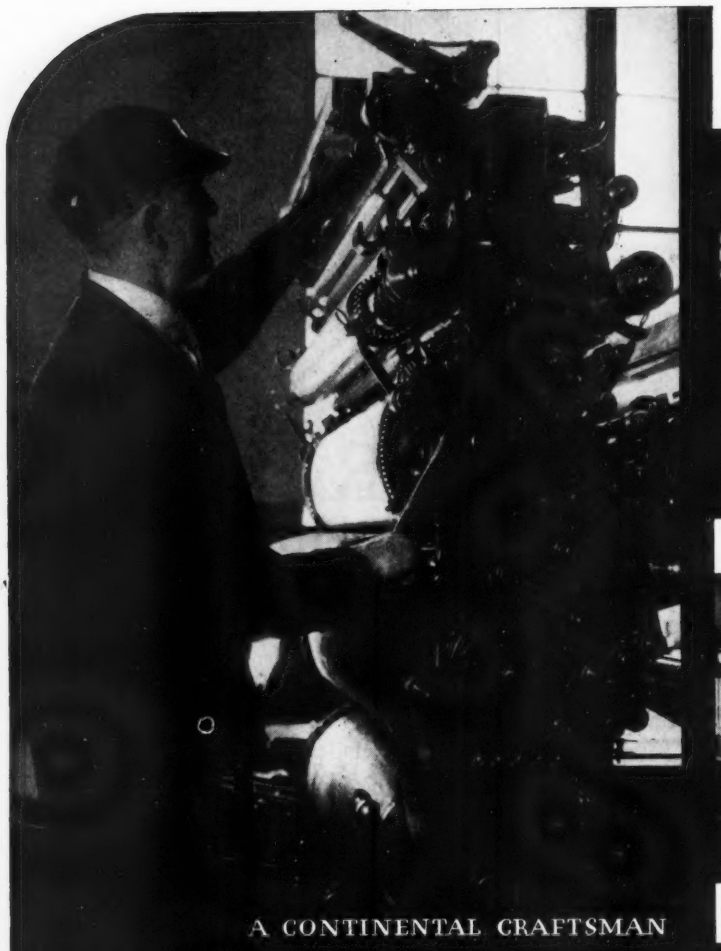
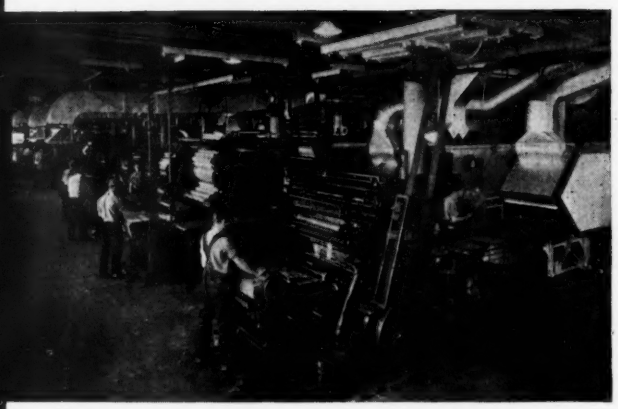
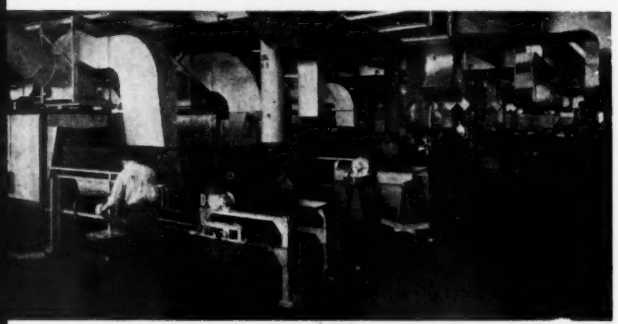


A CONTINENTAL CRAFTSMAN



A typical press room in one of the many Continental Plants



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Refinery - Tank Wagon Markets

Mid-West Gasolines Continue Downward; Lube Oils Higher in All Markets

CLEVELAND, Sept. 14

CONFLICTING price trends for gasoline continued to prevail in the more important tank car markets last week. Lubricating oils made substantial gains in all markets. Tank car markets for burning oils were quiet and prices were generally unchanged.

Aside from a 15-cent advance in Pennsylvania crude prices, crude markets and retail gasoline markets showed but little change. The 15-cent advance in Pennsylvania crude on Sept. 12 was the fifth in a series since the end of July which has sent prices up a total of 45 cents.

Local gasoline price wars cropped up here and there in the Standard of Indiana territory but there were no general territory changes during the week. The retail market improved at one important point in the Indiana company's territory—third-grade gasoline prices advanced 2 cents at Detroit.

Tank car prices for gasoline made further gains along the eastern seaboard while middle western refinery markets and also the Chicago market suffered rather drastic setbacks, prices dropping approximately 1 cent a gallon. While jobber buying was relatively light in the open market in eastern districts it was sufficient to prevent any shading of posted prices. Competition was keen for the small volume of spot business available in the middle west. Prices receded at the rate of 0.125 cent a day.

There was less fear in the Mid-Continent that East Texas gasoline would be the disturbing factor that some observers had been inclined recently to think it would be. Reports from that area indicated that many of the low-priced contracts for East Texas crude had been broken and that the refiners there could not operate on 68-cent oil with refined oil prices at their present levels. Lubricating oil markets presented a more encouraging picture than did gasoline markets. Neutral oils advanced 0.5 to 1 cent a gallon in Pennsylvania and bright stocks were up 1 to 1.50 cents in both the Pennsylvania and Mid-Continent markets. Pennsylvania refiners were said to be in good position with reference to all lubricating oil stocks.

Cargo markets were quiet. European buyers continued to direct most of their inquiries toward Rumania and Russia. Eastern buyers showed very little interest in either the Gulf or California market.

Gasoline Declines 0.5 Cent in Chicago Market

CHICAGO, Sept. 12

THE post-holiday gasoline buying which had been expected for the week ended Sept. 12 failed to materialize in the Chicago market. Prices continued to move downward.

The movement of gasolines to contract jobbers, generally buying on marginal contracts at prices under the spot market, remained good, but traders reported a disappointing spot demand. Apparently distributors were carrying heavy stocks of gasoline, bought when the market was going up, or were unwilling to buy under present conditions.

Practically all of the "in transit" gasoline which had started the spot market on its downward path was reported to be cleaned up. However, spot demand was so light that sellers who had goods to offer found it hard to move and the general range of the market moved down about 0.125 cent daily.

Most Chicago marketers said U. S. Motor gasoline they were offering was coming from Texas, although some Oklahoma goods also moved at the low of the price range. Several sellers reported moving Pennsylvania and Louisiana gasoline into portions of the Indiana territory. A few of the Indiana-Illinois refiners also moved their spot prices down in line with competition from other districts.

Summary of Group 3 Quotations for U. S. Motor Gasoline, 437 E.P.

In Effect Sept. 14

	Cents per Gallon
Oklahoma	3.625-4.125
Kansas	3.50-3.75
North Texas	3.50-3.75
West Texas	3.50-3.75
Louisiana-Arkansas	3.50-3.75
Indiana-Illinois	3.50-4.00

Prices are those quoted on the basis of f.o.b. Group 3 by refiners in the districts designated.

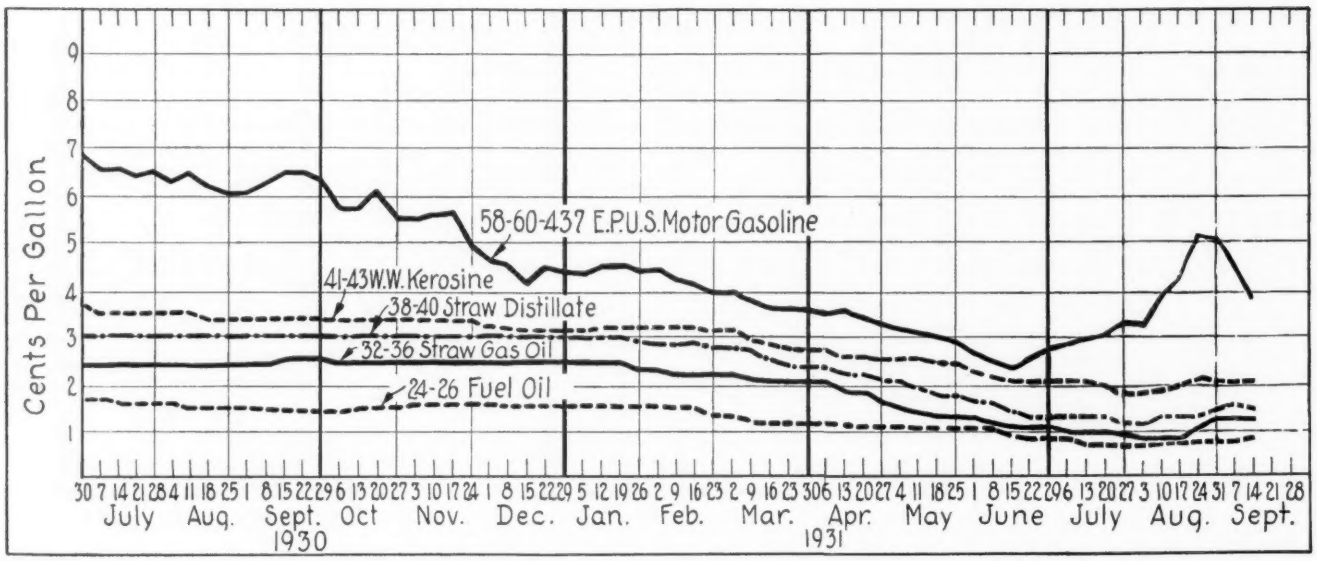
The rapid decline in spot gasoline prices resulted in a wide range of quotations. On Sept. 12, U. S. Motor was offered at prices ranging from 3.50 to 4.50 cents, depending upon how badly the seller was in need of shipping instructions. Most refiners continued to report that their gasoline storage was in good shape and that they were not pushing spot business.

Kerosine prices eased off during the latter part of the week, due to light demand and freer offerings of goods. Sales of 41-43 w.w. were reported at 1.875 to 2 cents on Sept. 12.

Distillates, while not in as good demand as in the previous week, showed few signs of weakness in price. Distributors of home burner oils said that most of their customers had made purchases, and it would take a cold spell to bring much of an increase in demand.

Industrial gas oil was more freely

Current Prices of Principal Mid-Continent Refined Products



Prices shown are in Group 3 basis and extended to date shown in Refinery Market Table Section of this issue

offered and 32-36 gravity oil moved down to 1 cent on the low of the price range. Fuel oils were steady both as to demand and price.

General Motors Owns 25% Bendix Stock

SOUTH BEND, Ind., Sept. 12.—Our industry will be watching closely for any changes in lubrication systems of General Motor cars as it became known this week that General Motors holds about 25 per cent of the stock of the Bendix Aviation Corp.

Bendix in turn is a joint equal owner, with the Standard Oil Co. of Indiana, in the Lubrication Corp., formed recently to manufacture and market fittings, grease dispensing equipment, and lubrications for a new automotive and industrial machinery lubrication system.

Although it has been announced that as yet car manufacturers have not placed orders for the new system our industry is watching closely for incorporation of the new system as original equipment.

Machine tools for manufacturing the new fittings are being designed at the Bendix plant in South Bend, and chemists at the Whiting, Ind., refinery of the Indiana Standard have perfected the lubricant formulas. Further announcement of the company's plans are expected in several months.

In announcing the new system last week it was claimed that the system would have an important bearing on automotive lubrication as the design of the fitting on the auto would enable a station operator to reach it from any angle. Through the use of a new material higher pressures were claimed for the grease dispensing line.

All oil companies will be able to obtain equipment and lubricants for servicing autos equipped with Lubrication Corp. fittings, it was announced further.

Executives of the Indiana Standard and Bendix form the official family of the new company. The name was selected for temporary use, and probably will be changed later.

Shipments From Southern California

LOS ANGELES, Sept. 10.—Shipments of bulk petroleum from southern California ports to Foreign and Atlantic Seaboard ports totaled 573,017 barrels for week ended Sept. 5, as compared with 684,631 barrels shipped a week ago. Destination and quantity of shipments were as follows:

Destination	Crude	Gasoline	Diesel	Kerosine	Fuel-Distillate	Fuel	Total
Pacific For.	25,938	13,619	32,419	97,731	.....	128,174	297,881
Atlantic Dom.	.....	78,307	.....	.....	196,829	.....	275,136
Atlantic For.	.....	.....	.....	NONE	.....	.....	.....

Total shipments from southern California ports during August were 7,031,867 barrels, compared with 7,023,726 barrels during the month of July and compared with 10,085,970 barrels for August of 1930. Destination and distribution of shipments during the month were as follows:

Destination	Crude	Gasoline	Kerosine	Distillate	Diesel	Fuel	Total
Pacific Dom.	1,459,291	1,280,591	8,809	5,800	86,425	1,091,195	3,932,111
Pacific For.	399,420	268,498	80,655	.....	216,856	663,471	1,628,900
Atlantic Dom.	.....	802,419	57,000	258,668	.....	.....	1,118,087
Atlantic For.	.....	352,769	.....	.....	.....	.....	352,769

Prices A Year Ago

Sept. 15, 1930

	Oklahoma	Penna.
58-60 U. S. Motor Gasoline	6.4107	6.75-7.375
Grade A Natural Gasoline	5.75	.....
Kerosine (Okla. 41-43; Pa. 47 w. w.)	3.125-3.50	5.375-6.00
Fuel Oil (Okla. 24-26; Pa. 36-40)	$0.575-$0.65	4.00-4.25
Crude (Okla. 35-35.9)	$1.255	$2.30
Chicago tank wagon (including 3c tax)		18.00c

Eastern Pipeline Rates Cut

WASHINGTON, Sept. 14.—Buckeye Pipe Line Co., Eureka Pipe Line Co. and the S. W. Pennsylvania Pipe Lines have filed notice with the Interstate Commerce Commission that they will reduce rates on Oct. 15 from Ohio, West Virginia and Pennsylvania points to the Atlantic seaboard.

Buckeye will reduce rates from Ohio points from 39 to 33 cents per barrel to Bayway, N. J., and Marcus Hook, Pa. S. W. Pennsylvania lines will make a similar cut from Ewings, Pa., to Bayway and Eureka will make the same cut from Morgantown, W. Va., to Bayway. Eureka rates from other West Virginia points to Bayway and Marcus Hook will be cut from 74 to 68 cents per barrel.

Mid-Continent Refinery Markets

Bright Stocks Advance as Gasolines Decline

Staff Special

TULSA, Sept. 12

ADVANCES of 1 to 1.50 cents in bright stock prices, and further declines in refined and natural gasoline prices featured the Mid-Continent refinery market this week.

Continued advances in Pennsylvania bright stocks have been reflected in the Mid-Continent to a larger degree within the past few weeks. Inquiries were more numerous, and several sizeable orders have been placed. Two or three refiners who normally have bright stock in storage, report they are unable to book any more orders at present. This is due partly to the fact that their plants have been operated at reduced capacity for the past month or six weeks.

No changes were made in neutral oil prices prior to the end of the week. Demand for neutrals was good most refiners reported, particularly the low cold test oils.

Nothing of sufficient consequence to check the downward trend of refined gasoline prices appeared on the horizon this week. Jobbers continued to be extremely sparing in their buying, and the result was another week of light spot activity.

Texas districts continued to set the pace for the decline in gasoline prices. Refiners in the north, west and Panhandle districts reported jobber buying extremely light and in many instances odd car lots of distress gasoline were shoved on the market. This distress gasoline, coupled with some in transit gasoline that was difficult to dispose of, tended to push prices downward.

Reports were heard that with the opening of the East Texas field the refiners in that area would have gasoline to sell at low prices. A check late in the week indicated, however, the East Texas refiners were not much better off with the field open than they were when martial law was in effect. There has been no move to reopen several of the smaller plants.

The sales manager for one plant said his check indicated many of the low priced crude contracts had been broken and that the refiners could not operate on 68-cent oil with refined oils prices at their present levels.

It must be kept in mind also that the East Texas refiner must look primarily to gasoline for his revenue. Colder weather will shut him out of most of the gas oil and fuel oil business, although a few of them can compete to some extent for kerosine and distillate business this winter.

The effect of these declining prices on other areas was depressing, in the Oklahoma, Kansas and Louisiana-Arkansas districts. Oklahoma refiners for the most part were in good shape as far as stocks were concerned, but with other areas setting the market on which their contract gasoline moved there was little left for the Oklahoma refiners to do but to reduce spot prices in line with the markets shown.

One fact remains apparent in Oklahoma. The hue and cry about a crude shortage as a result of martial law seems to have been primarily nothing more than that. The predictions were numerous that many refiners in Oklahoma would be forced to shut down "within 10 days" after Governor Murray declared martial law, but from reports current here virtually all refineries have continued to obtain sufficient crude to prevent a shut down, although many of them admittedly are running at a reduced rate.

Texas also was the sore spot in the natural gasoline market. Production had not been curtailed there as it had been in Oklahoma, and with the light spot buying and the caution exercised by refiners for placing orders for deferred shipment, considerable distress gasoline appeared on the market in the course of the week. This situation reacted against prices in Oklahoma despite the fact that there was a comparatively small amount of gasoline available in that state for movement in the open market.

Kerosines were reported more freely offered in several quarters. Prices showed little change. Distillates also were more freely offered but increased buying for storage apparently took up the slack sufficiently to keep prices on an even keel.

Gas oils were also more freely offered for September shipment. This was especially true in Oklahoma. The zero cold test grades, however, were closely held at price levels established a week or 10 days ago.

High gravity fuel oil prices moved up slightly as demand showed some increase. The low cold test oils became scarcer as the demand increased, and buyers reported more difficulty obtaining any for prompt shipments.

An Exclusive
Petroleum
Laboratory

GASOLINE ANALYSES

KNOCK RATING determinations run on Ethyl Gasoline Corporation Series 30-A engine, according to standard methods. Results reported in octane numbers as advocated by U. S. Bureau of Standards and S.A.E.

ROUTINE TESTS: Distillation, doctor, corrosion, gravity, dissolved and potential gums, vapor pressure, sulfur content.

LUBRICATING OILS.
Flash, fire, viscosity, gravity, carbon, acidity, cold tests, steam emulsion number, color and surface tension.

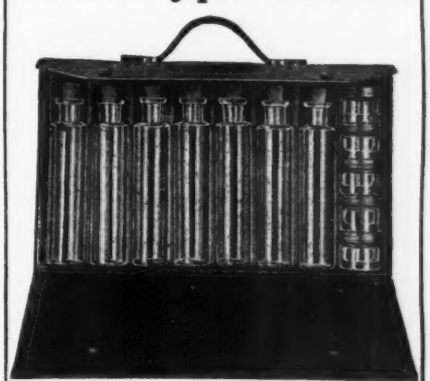
FUEL OILS.
Flash, fire, viscosity, B.S.&W. water by distillation, B.T.U., sulfur and cold test to 70 below O.

Additional services such as inspecting cars, acting as referee in disputes, and research in refining problems.

Send for schedule of charges.

PHOENIX
CHEMICAL LABORATORY INC.
3953 CASTELLO AVE., CHICAGO

Box Type Cases



Attractive and serviceable cases of black cobra grain Keratol and lined with red velveteen. Comfortable handle. Plain bottles in separate compartments.

No. 260—Contains twelve 2-oz. long bottles and five ¼-oz. tall grease jars..... $3.20

No. 261—Contains six 4-oz. bottles and five ½-oz. grease jars..... $3.55

No. 262—Contains seven 4-oz. bottles and five grease jars..... $3.80

No. 263—Contains nine 4-oz. bottles and four ½-oz. grease jars..... $4.25

10% discount for Cash

Other Styles in our FREE Catalog

L-U-C-E

Builders of Sales Luggage

614 Delaware Kansas City, Mo.

Chicago Tank Car Market

CHICAGO, Sept. 12

THE Chicago gasoline market was quiet last week and tank car prices were off approximately 0.50 cent. Jobbers were taking little interest in the spot market and sellers were offering goods at lower prices in attempts to get business. The low of the price range for U. S. Motor was at 3.50 cents on Sept. 12 compared to 4.125 cents when the week began. Kerosine demand was light and the commodity was more freely offered. Prices moved down 0.125 cent on both grades. Buying of home burner oils slackened but prices were without material change.

Following prices represent majority of sales to jobbers on Group 3 freight basis, although shipments may originate in other refining districts, such as North, West and East Texas, Louisiana, Arkansas, Indiana, Illinois, Kentucky, etc.

	Prices Sept. 14	Prices Sept. 8	Prices Aug. 31
50-52, 437 e.p. naphtha	3.50 – 3.75	4.25 – 4.50	4.75
58-60 U. S. Motor, 437 e.p.	3.50 – 3.75	4.125– 4.50	4.875– 5.00
Anti-knock gasoline 60-69 Octane Number	3.75 – 4.25	4.625– 5.00	†5.50
Anti-knock gasoline, 70 Octane Number and above	4.50 – 5.00	5.25 – 5.75	†6.00 – 6.25
60-62, 437 e.p. gasoline	3.50 – 4.00	4.25 – 4.75	5.00 – 5.25
60-62 400 e.p. gasoline	3.75 – 4.25	4.50 – 5.00	5.125– 5.375
64-66 375 e.p. gasoline	4.00 – 4.375	5.00 – 5.25	†5.50 – 5.75
68-70 350-360 e.p. gasoline	4.25 – 4.75	5.25 – 5.50	†5.75 – 6.00
*Domestic Aviation Gasoline	6.00 – 6.50	7.00 – 7.25	7.00 – 7.25
41-43 w.w. kerosine	1.875– 2.00	2.00 – 2.125	2.00 – 2.125
42-44 w.w. kerosine	2.00 – 2.25	2.125– 2.375	2.125– 2.375
38-40 p. w. distillate	1.50	1.50	1.50
38-40 straw distillate	1.375– 1.50	1.375– 1.50	1.375– 1.50
32-36 ordinary dark gas oil	1.00 – 1.25	†1.125– 1.25	†1.125– 1.25
32-36 dark zero gas oil	†1.25 – 1.375	†1.25 – 1.375	1.25 – 1.375
32-36 straw zero gas oil	1.375– 1.50	1.375– 1.50	1.25 – 1.50
28-30 zero fuel oil (per bbl.)	†$0.425–$0.475	†$0.425–$0.475	†$0.425–$0.475
28-30 fuel oil (per bbl.)	$0.35 –$0.40	$0.35 –$0.40	$0.35 –$0.40
24-26 fuel oil (per bbl.)	$0.275–$0.30	$0.275–$0.30	$0.25 –$0.30
18-22 fuel oil, (per bbl.)	$0.225–$0.25	$0.225–$0.25	$0.225–$0.25
18-22 zero fuel oil (per bbl.)	$0.25 –$0.30	$0.25 –$0.30	$0.25 –$0.30
14-16 fuel oil (per bbl.)	$0.20 –$0.225	$0.20 –$0.225	$0.20 –$0.225

*Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% recovery at 221°; 90% at 311°; 96% at 347°; end point 374° F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

†Nominal.

Flashing System Patent Issued To Dubbs After 13 Years

CHICAGO, Sept. 12. — Thirteen years of litigation in the patent office ended on Aug. 25 in the issuance to Universal Oil Products Co., as assignee of Carbon P. Dubbs, the inventor, of Patent No. 1,820,057, covering the so-called flashing operation in conjunction with the cracking of oil.

The issuance of this patent is of great importance inasmuch as the flashing operation is used to a large extent by many refining companies. The battle in the patent office was between Universal Oil Products Co. and Gasoline Products Co. (Cross), and while it raged the flashing method of cracking gained wider and wider use.

The flashing operation as is generally known consists in operating a cracking unit in such a manner that the cracked residue continuously passes from the high pressure cracking zone into a flash chamber in which the pressure is reduced, and the flashed distillate returned for further cracking.

The purpose of this method of operation is to prolong the cracking cycle by avoiding the formation of coke in the reaction chamber and consequently the frequent shut-downs necessary for cleaning out where cracking units are run to form coke.

Application for Patent No. 1,820,057 was filed June 20, 1918, and embraces twelve claims.

Typical claims of the patent read as follows:

1. The improvement in the art of pressure distillation of petroleum oils for the purpose of producing lighter products by pyrogenesis, which consists in maintaining a considerable body of said oil under cracking conditions of temperature and pressure, continuously withdrawing oil from the said body, releasing the pressure from the withdrawn oil while the latter is in a heated condition, whereby its lighter fractions will distill off, collecting such lighter fractions and returning them to the oil body for further cracking therein.

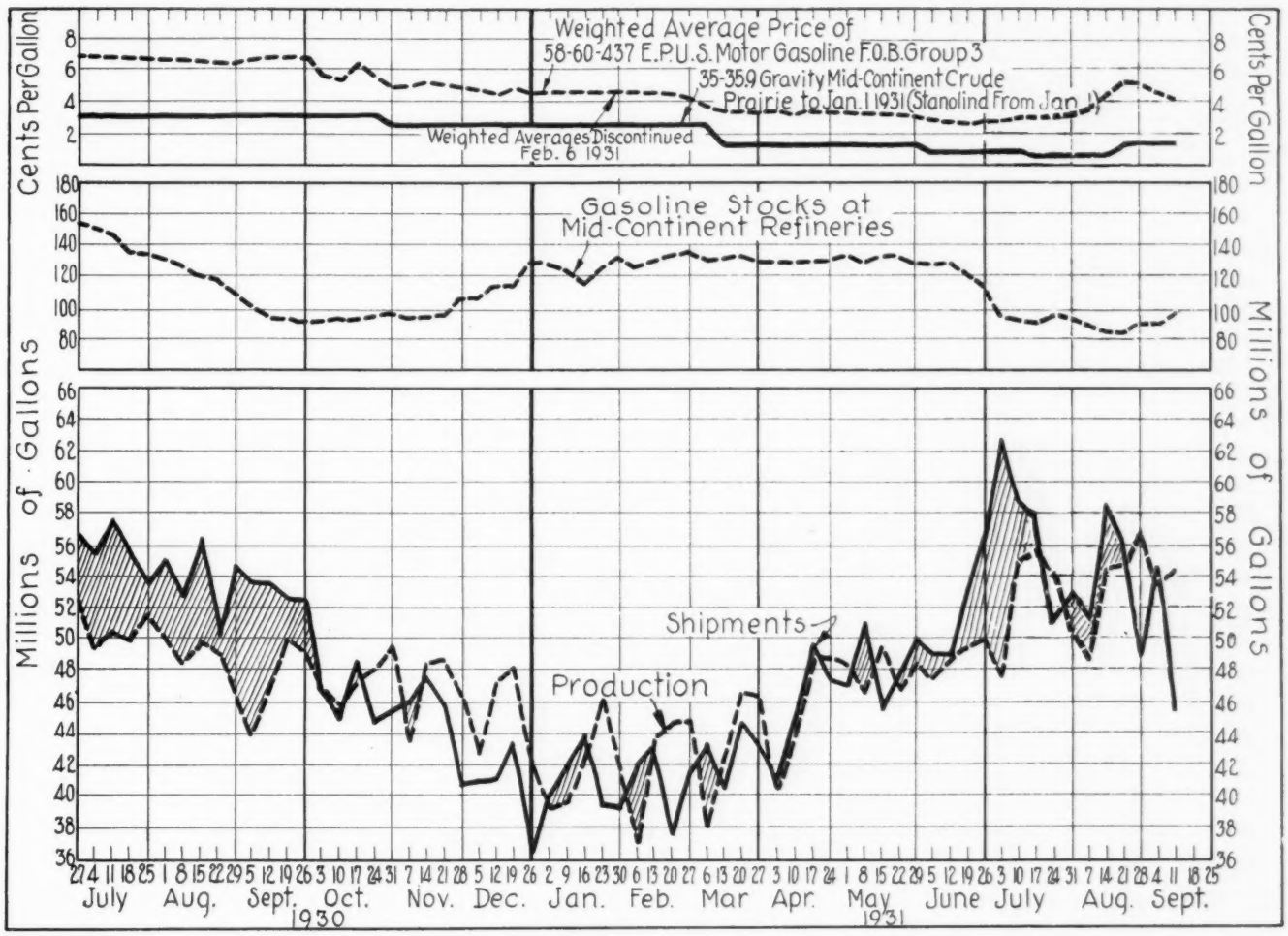
9. An improvement in the art of pressure distillation of petroleum oils for the purpose of producing lighter products by pyrogenesis, which consists in maintaining a body of said oil under cracking conditions of temperature and pressure, in continuously withdrawing oil from said body, releasing the pressure from the withdrawn oil while the latter is in a heated condition whereby its lighter fractions will distill off, collecting said lighter fractions and returning them to the oil body for further cracking therein.

At the same time a second patent was issued to Dubbs, No. 1,820,125, on a flashing operation in which a part of the flash distillate together with a portion of the ordinary pressure distillate acts as a dephlegmating medium.

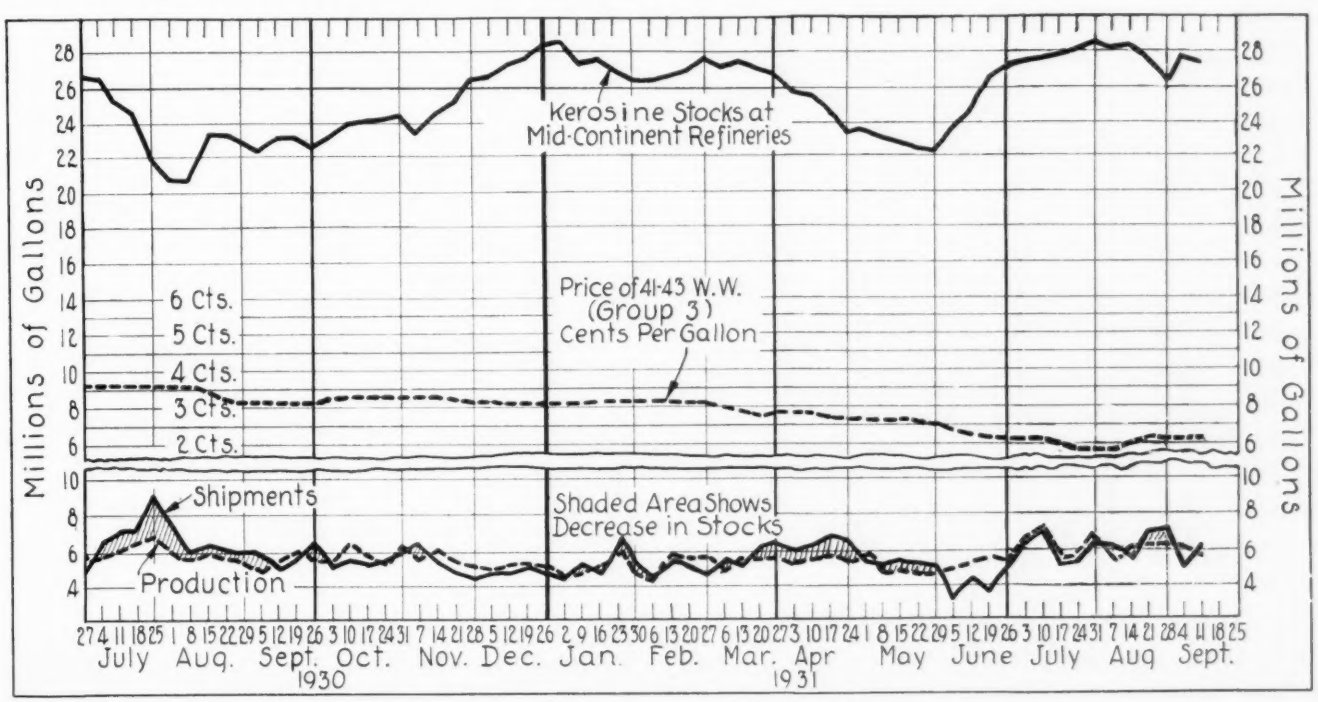
OCTANE number ratings as shown in NATIONAL PETROLEUM NEWS market tables are quoted on sellers' statements; tests are understood to be made according to the tentative standard method of test as adopted by the Detonation Subcommittee of the Co-operative Fuel Research Steering Committee, which were published in NATIONAL PETROLEUM NEWS for Aug. 5, 1931; also in the S. A. E. Journal, Aug., 1931.

Barometer of Mid-Continent Refinery Market—Week Ending September 11

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News


Cents Per Gallon
Weighted Average Price of
58-60-437 E.P.U.S. Motor Gasoline F.O.B. Group 3
35-35.9 Gravity Mid-Continent Crude
Prairie to Jan. 1 1931 (Stanolind From Jan. 1)
Weighted Averages Discontinued Feb. 6 1931
Gasoline Stocks at Mid-Continent Refineries
Millions of Gallons
Shipments
Production
July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar Apr May June July Aug. Sept.
1930
1931

Prices shown above are extended to date shown in Refinery Market and Crude tables in Market section of this issue and stocks, shipments and Production are extended to date as shown in the table on page 74



Refinery Markets on Light Oils and Lubricants

Prices given below are in cents per gallon, except where ▷ is shown in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(These Refinery Prices compiled in the OIL PRICE HANDBOOK for a whole year)

GASOLINE AND NAPHTHA

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Sept. 14	Prices Sept. 8	Prices Aug. 31
48-50 450 e.p. naphtha...	†3.50	†4.25	†4.75
50-52 450 e.p. naphtha...	†3.50	†4.25	†4.75
56-58 450 e.p. gasoline...	†3.50	†4.25	†4.75
58-60 450 e.p. gasoline...	†3.50	†4.25	†4.75
58-60 U.S. Motor 437 e.p.	3.625– 4.125	4.25 – 4.75	†5.00 – 5.375
60-62 437 e.p. gasoline...	3.75 – 4.125	4.50 – 4.75	†5.125– 5.375
60-62 400 e.p. gasoline...	3.875– 4.25	5.00	†5.375– 5.50
64-66 390 e.p. gasoline...	4.125– 4.50	5.25	†5.50 – 5.625
64-66 375 e.p. gasoline...	4.25 – 4.75	5.375	†5.75
68-70 350-360 e.p. gasoline	4.625– 4.875	5.50	†6.00
‡Domestic Aviation Gasoline.....	6.25 – 6.50	7.00 – 7.25	7.00 – 7.25

‡Prices based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167° F., and not less than 122° F.; 50% rec. at 221°; 90% at 311°; 96% at 347°; end point, 374° F. Fighting grade in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

52-54 Naphtha.....	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
54-56 Naphtha.....	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
58-60 U.S. Motor 437 e.p.	5.50 – 5.75	5.50 – 5.75	5.50 – 5.75
60-62 400-410 e.p. gasoline	5.625– 5.875	5.625– 5.875	5.625– 5.875
64-66 390 e.p. gasoline...	6.00 – 6.25	6.00 – 6.25	5.75 – 6.25
68-70 350-360 e.p.....	6.00 – 6.50	6.00 – 6.50	6.00 – 6.50

OHIO (Quotations of S. O. Ohio. 4c state tax to be added.)

U. S. Motor Gasoline			
Ohio, delivery at any point.....	7.50	7.50	7.50

KANSAS (F. o. b. refinery Kansas destination)

58-60 U.S. Motor 437 e.p.	4.125– 4.75	4.75 – 5.00	†5.375– 5.75
60-62 437 e.p. gasoline...	4.50 – 5.00	5.00	†5.375– 5.75
60-62 400 e.p. gasoline...	5.00 – 5.25	5.25	†5.625– 5.875
64-66 375 e.p. gasoline...	5.50	5.50	†5.75 – 6.00

NORTH TEXAS (F. o. b. North Texas refineries)

56-58 450 e.p. gasoline...	†3.375– 3.50	†4.00	†4.50
58-60 450 e.p. gasoline...	†3.375– 3.50	†4.00	†4.50
58-60 U.S. Motor 437 e.p.	3.50 – 3.75	4.25 – 4.50	†4.75 – 5.00
60-62 400 e.p. gasoline...	†3.75 – 4.00	†4.50 – 4.625	†5.00
64-66 390 e.p. gasoline...	4.00 – 4.25	4.875– 5.125	†5.25
64-66 375 e.p. gasoline...	4.25 – 4.625	†5.25	†5.375– 5.50
68-70 350-360 e.p. gasoline	†4.50 – 4.75	†5.50	†5.50 – 5.625

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment)

50-52 naphtha.....	†3.25	†3.25 – 3.625	†3.25 – 3.625
58-60 437 e.p. gasoline...	†3.25 – 3.50	†4.00	†4.75 – 5.00
58-60 U.S. Motor 437 e.p.	†3.50 – 3.75	†4.25 – 4.50	†5.00

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

58-60 U.S. Motor 437 e.p.	4.50	5.25	5.50

ARKANSAS (Ark., N. La. and Miss. destination)

58-60 U.S. Motor 437 e.p.	4.50	5.25	5.50

CALIFORNIA (3c tax to be added to California gasoline prices if used in state.)

54-58 U.S. Motor 437 e.p.	4.75 – 8.50	6.25 – 8.00	6.00 – 8.00
54-58 U.S. Motor, for outside state shipment....	5.00 – 6.00	5.75 – 7.25	5.50 – 7.25
58-61 375-400 e.p. gasoline	9.00 –10.50	9.00 –10.50	9.00 –10.50
42-45 Engine Distillate 445-480 e.p.....	5.00 – 7.00	7.00 – 8.00	7.00 – 8.00

NATURAL GASOLINE

(Note: End point of all grades, not over 375F. Corrosion test adopted Oct 1, 1927; A.S.T.M. Method D130-27T; doctor test, July 2, 1928.)

OKLAHOMA (F. o. b. Oklahoma refineries)

Grade AA, 80-87.9, 90% Recovery.....	†4.00	†4.25 – 4.50	5.00
Grade A, 72-79.9, 90% Recovery.....	†4.00 – 4.25	†4.50	†5.25
Grade BB, 84-92, 85% Recovery.....	†4.00	†4.00 – 4.25	†5.00
Grade B, 76-83.9, 85% Recovery.....	†4.00	†4.00 – 4.25	†5.00
Grade C, 80-92, 78% Recovery.....	†4.00	†4.00 – 4.25	†5.00
(New Specifications)			
Grade ‡26-70.....	‡4.00	‡4.25 – 4.50	‡5.00

‡Grade 26-70 is a product of 26 lbs. vapor pressure at 100° F. (Reid method) with 70 to 85% evaporated at 140° F. Prices represent sales and quotations of bulk of natural gasoline now sold under new specifications. Other grades will be added when volume of sales warrants these additions.

NORTH TEXAS (F. o. b. Breckenridge)

	Prices Sept. 14	Prices Sept. 8	Prices Aug. 31
Grade AA, 80-87.9, 90% Recovery.....	†3.75	†4.00 – 4.25	4.50 – 4.75
Grade A, 72-79.9, 90% Recovery.....	†3.75 – 4.00	†4.25	†5.00
Grade BB, 84-92, 85% Recovery.....	†3.75	†3.875– 4.125	†4.50 – 4.75
Grade B, 76-83.9, 85% Recovery.....	†3.75	†3.875– 4.125	†4.50 – 4.75
Grade C, 80-92, 78% Recovery.....	‡3.75	†3.875– 4.125	†4.50 – 4.75
(New Specifications)			
Grade ‡26-70.....	‡3.75	‡4.00 – 4.25	‡4.50 – 4.75

‡See footnote under Oklahoma Natural Gasoline.

NORTH LOUISIANA (F. o. b. Monroe District)

Grade AA.....	†4.00	†4.25	†5.00
Grade BB.....	†3.75 – 4.00	†4.00	†5.00
Grade C.....	†3.75 – 4.00	†4.00	†5.00

CALIFORNIA (F. o. b. California refineries)

75-85, 375-390 e.p. for blending.....	4.50 – 5.50	4.50 – 5.50	4.50 – 5.50

BURNING OILS

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

45 w.w. kerosine.....	3.50 – 3.75	3.50 – 3.75	3.50 – 3.75
46 w.w. kerosine.....	3.625– 4.00	3.625– 4.00	3.625– 3.875
47 w.w. kerosine.....	3.875– 4.25	3.875– 4.25	3.875– 4.00

OKLAHOMA (F. o. b. Oklahoma refineries)

41-43 w.w. kerosine	2.00 – 2.25	2.00 – 2.25	2.00 – 2.25
42-44 w.w. kerosine	2.125– 2.375	2.125– 2.375	2.125– 2.375

KANSAS (F. o. b. refinery Kansas destination)

41-43 w.w. kerosine.....	2.25 – 2.50	2.25 – 2.50	2.25 – 2.50
42-44 w.w. kerosine.....	2.50 – 2.75	2.50 – 2.75	2.50 – 2.75

NORTH TEXAS (F. o. b. North Texas refineries)

40-42 w.w. kerosine.....	1.875– 2.00	1.875– 2.00	1.875– 2.00
41-43 w.w. kerosine.....	2.00 – 2.125	2.00 – 2.125	2.00 – 2.125

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

41-43 w.w. kerosine.....	2.50	2.50 – 3.00	2.50 – 3.00

ARKANSAS (Ark., N. La. and Miss. destination)

41-43 w.w. kerosine.....	2.50	2.50 – 3.00	2.50 – 3.00

CALIFORNIA (F. o. b. California refineries)

38-40 w.w. kerosine.....	4.00 – 5.00	4.00 – 5.00	4.25 – 5.25

NEUTRAL OIL

PENNSYLVANIA (F. o. b. Western Pennsylvania refineries)

Vis.	(Viscosity at 70° F.)		
200 No. 3 color, 420-425 flash.....	21.00 –22.00	21.00 –21.50	20.50 –21.00
180 No. 3 color, 410-415 flash.....	.....	†19.00	18.50 –19.00
150 No. 3 color, 400-405 flash.....	†17.50 –18.00	†16.50 –17.00	†16.00 –16.50

****MID-CONTINENT** (F. o. b. Mid-Continent refineries)

Vis. Color	(Viscosity at 100° F.)		
100—No. 2.....	4.25 – 4.75	4.25 – 4.75	4.25 – 4.75
150—No. 3.....	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
150—No. 4.....	5.75	5.75	5.75
180—No. 3.....	8.00	8.00	8.00
180—No. 4.....	7.25 – 7.50	7.25 – 7.50	7.25 – 7.50
180—No. 5.....	7.00	7.00	7.00
200—No. 3.....	8.50	8.50	8.50
200—No. 4.....	8.25 – 8.375	8.25 – 8.375	8.25 – 8.375
200—No. 5.....	8.00 – 8.25	8.00 – 8.25	8.00 – 8.25
220—No. 3.....	9.25 – 9.50	9.25 – 9.50	9.25 – 9.50
220—No. 4.....	8.75	8.75	8.75
220—No. 5.....	8.25	8.25	8.25
240—No. 3.....	10.00 –10.50	10.00 –10.50	10.00 –10.50
240—No. 4.....	9.50 –10.00	9.50 –10.00	9.50 –10.00
240—No. 5.....	9.00 – 9.50	9.00 – 9.50	9.00 – 9.50
280—No. 3.....	11.75	11.75	11.75
280—No. 4.....	10.75 –11.25	10.75 –11.25	10.75 –11.25
280—No. 5.....	10.00 –10.75	10.00 –10.75	10.00 –10.75

Note: Quotations for 0 to 10 cold test neutral oils are ¼ to ½c higher depending on the grade.

†Prices nominal ††Only one refiner quoting *Quotations only **Prices represent Quotations and Sales.

Refinery Markets Wax, Lubricants, Heavy Oil

Prices given below are in cents per gallon, except where $ is shown in tank car lots, f.o.b. Refinery. They represent prices made only to domestic jobbers who resell to the consuming public, except where otherwise noted.

(For quick reference to Refinery Prices, get the OIL PRICE HANDBOOK, published annually)

GULF COASTAL (F. o. b. Gulf Coastal refineries)

Vis. Color	Prices Sept. 14 (Viscosity at 100° F., pour test 0)	Prices Sept. 8	Prices Aug. 31
100—No. 2 Pale	5.00 – 5.25	5.00 – 5.25	5.00 – 5.25
200—No. 3 Pale	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
300—No. 3 Pale	8.00 – 8.25	8.00 – 8.25	8.00 – 8.25
500—No. 3½ Pale	9.00 – 9.25	9.00 – 9.25	9.00 – 9.25
750—No. 4 Pale	10.00 –10.25	10.00 –10.25	10.00 –10.25
1200—No. 4 Pale	12.00 –12.25	12.00 –12.25	12.00 –12.25
2000—No. 4-5 Pale	13.00 –13.25	13.00 –13.25	13.00 –13.25
200—No. 5½ Red Oil	6.00 – 6.25	6.00 – 6.25	6.00 – 6.25
300—No. 5½ Red Oil	7.00 – 7.25	7.00 – 7.25	7.00 – 7.25
500—No. 6 Red Oil	8.00 – 8.25	8.00 – 8.25	8.00 – 8.25
750—No. 6 Red Oil	9.00 – 9.25	9.00 – 9.25	9.00 – 9.25
1200—No. 5-6 Red Oil	11.00 –11.25	11.00 –11.25	11.00 –11.25
2000—No. 6 Plus Red Oil	13.00 –13.25	13.00 –13.25	13.00 –13.25

CALIFORNIA (F. o. b. California refineries)

Vis. Color	(Viscosity at 100° F.)		
100—No. 3	8.00	8.00	8.00
200—No. 3	10.00	10.00	10.00
300—No. 3	10.50	10.50	10.50
450—No. 3	12.00	12.00	12.00
550—No. 3	13.50	13.50	13.50
600—No. 3	13.50	13.50	13.50
200—No. 5	10.00	10.00	10.00
300—No. 5	10.50	10.50	10.50
400—No. 5	12.00	12.00	12.00
500—No. 5	13.00	13.00	13.00
600—No 5	13.50	13.50	13.50
700—No. 7	13.50	13.50	13.50

CYLINDER STOCKS

MID-CONTINENT (F. o. b. Mid-Continent refineries)

(Cylinder stock prices represent quotations and sales to domestic jobbers only).

190-200 Vis. D at 210° Brt. St.	20.50	19.00	19.00
150-160 Vis. D at 210° Brt. St., 0-10 cold test	18.50	17.00	17.00
150-160 Vis. D at 210° Brt. St., 10-25 cold test	18.00	16.50	16.50
150-160 Vis. D Brt. Stock, 25-40 cold test	17.50	16.50	16.50
150-160 Vis. E 210° Brt. St.	17.00 –17.50	15.50 –16.00	15.50 –16.00
600 St. Ref. Olive Green	6.00 – 7.00	5.00 – 6.00	5.00 – 6.00
600 St. Ref. Dark Green	5.00 – 6.00	4.00 – 5.00	4.00 – 5.00
Black Oil	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00

PENNSYLVANIA (F. o. b. Western Penna. refineries) (A.S.T.M. Tests)

600 Steam Refined, filterable	†14.00 –15.00	†13.50 –14.00	†12.50 –13.50
650 Steam Refined	†18.00 –19.00	†17.00 –18.00	†15.00 –16.00
600 Flash	†20.00 –21.50	†19.00 –21.00	†16.00 –18.00
630 Flash	†22.00 –25.00	†21.00 –25.00	†20.00 –22.00
600 Warren E	†18.50 –19.00	†18.50 –19.00	†18.50 –19.00
Cold Test Stocks, 140-150 vis. at 210°, 540-550 flash, No. 8 color, 20 pour test and below	30.00 –31.50	†30.00 –31.00	†30.00 –31.00
No 8 color, 25 and 35 pour test	30.00 –31.00	29.00 –30.00	28.00 –30.00
No. 8 color, 40 pour test and above	29.00 –30.00	28.00 –30.00	28.00 –29.00

WAX

PENNSYLVANIA (Per pound, F. o. b. New York)

122-124 white crude scale a.m.p.	1.90 – 2.00	1.875– 2.00	1.875– 2.00
124-126 white crude scale, a.m.p.	1.90 – 2.00	1.875– 2.00	1.875– 2.00

****OKLAHOMA** (Per pound in barrels; in a few instances, per pound in burlap bags; F. o. b. Oklahoma refineries.)

124-126 White Crude Scale, a.m.p.	1.75 – 1.875	1.75 – 1.875	1.75 – 1.875

DISTILLATE, GAS AND FUEL OIL

PENNSYLVANIA (For outside Pittsburgh district)

36-40 fuel oil	2.75 – 3.00	2.875– 3.00	2.875– 3.00

†Prices nominal ††Only one refiner quoting *Quotations only

OKLAHOMA (F. o. b. Oklahoma refineries)

	Prices Sept. 14	Prices Sept. 8	Prices Aug. 31
38-40 straw distillate	1.50	1.50	1.375– 1.50
36-38 straw distillate	†1.375	†1.375	†1.375
32-36 straw gas oil	1.25	1.25 – 1.375	†1.25 – 1.375
32-36 straw gas oil zero	†1.50 – 1.625	†1.50 – 1.625	†1.50 – 1.625
32-36 dark gas oil	†1.125– 1.25	†1.25	†1.25
32-36 dark gas oil zero	†1.375– 1.50	†1.375– 1.50	†1.375– 1.50
28-30 zero fuel oil(per bbl.)	$0.425–$0.45	$0.40 –$0.45	$0.40 –$0.45
28-30 fuel oil (per bbl.)	$0.40 –$0.425	$0.375–$0.40	$0.375–$0.40
26-28 fuel oil (per bbl.)	$0.375–$0.40	$0.35 –$0.375	$0.35 –$0.375
24-26 fuel oil (per bbl.)	$0.325–$0.35	$0.30 –$0.325	$0.30 –$0.325
22-26 fuel oil (per bbl.)	$0.275–$0.325	$0.25 –$0.30	$0.25 –$0.30
18-22 fuel oil (per bbl.)	$0.25 –$0.275	$0.25 –$0.275	$0.25 –$0.275
16-20 fuel oil (per bbl.)	$0.225–$0.275	$0.225–$0.275	$0.225–$0.275
14-16 fuel oil (per bbl.)	$0.20 –$0.25	$0.20 –$0.25	$0.20 –$0.25

KANSAS (F. o. b. refinery Kansas destination)

38-40 straw distillate	1.875– 2.00	1.875– 2.00	1.625– 1.875
36-38 straw distillate	1.75	1.75	1.50 – 1.75
32-36 straw gas oil	1.375– 1.50	1.375– 1.50	1.375– 1.50
18-22 fuel oil (per bbl.)	$0.275–$0.375	$0.275–$0.375	$0.275–$0.375
10-14 fuel oil (per bbl.)	$0.275–$0.325	$0.275–$0.325	$0.225–$0.275

NORTH TEXAS (F. o. b. North Texas refineries)

38-40 straw distillate	1.375– 1.50	1.25 – 1.375	1.25 – 1.375
38-40 p.w.treated distillate	1.50	1.50	1.50
32-36 gas oil, cracked	1.125– 1.375	1.125– 1.375	1.125– 1.375
32-36 St. reduced gas oil	†1.25	†1.25	†1.25
24-26 fuel oil (per bbl.)	$0.30 –$0.35	$0.30 –$0.35	$0.30 –$0.35
20-24 fuel oil (per bbl.)	$0.25 –$0.30	$0.25 –$0.30	$0.25 –$0.30
18-22 fuel oil (per bbl.)	$0.225–$0.25	$0.225–$0.25	$0.225–$0.25

****WEST TEXAS** (F. o. b. West Texas refinery, for unrestricted shipment

30-32 gas oil	1.00 – 1.125	1.00 – 1.125	1.00 – 1.125
28-30 zero gas oil	1.00 – 1.125	1.00 – 1.125	1.00 – 1.125
18-22 fuel oil (per bbl.)	$0.225–$0.25	$0.225–$0.25	$0.225–$0.25

NORTH LOUISIANA (N. La., Ark. and Miss. destination)

32-36 gas oil, dark	1.75 – 2.00	2.00	2.00
32-36 gas oil, straw	1.75 – 2.00	2.00	2.00
14-16 fuel oil (per bbl.)	$0.40 –$0.50	$0.55 –$0.60	$0.55 –$0.60

ARKANSAS (Ark., N. La. and Miss. destination)

32-36 gas oil, straw	1.75 – 2.00	2.00	2.00
32-36 dark gas oil	1.75 – 2.00	2.00	2.00
28-30 gas oil	1.75	1.75	1.75
20-24 fuel oil (per bbl.)	$0.50 –$0.60	$0.60 –$0.675	$0.60 –$0.675
9-12 fuel oil (per bbl.)	$0.35 –$0.45	$0.45 –$0.50	$0.45 –$0.50
Black oil	3.00	3.00	3.00

CALIFORNIA (F. o. b. San Joaquin Valley. Nominal pipe line charge to San Francisco 24c per bbl. more and to San Pedro 20c per bbl. more.)

14-18 fuel oil (per bbl.)	$0.40 –$0.55	$0.40 –$0.55	$0.40 –$0.55
14-18 Bunker oil (per bbl.)	$0.50 –$0.75	$0.50 –$0.75	$0.50 –$0.75
30-34 gas oil (per bbl.)	$0.65 –$0.85	$0.65 –$0.85	$0.65 –$0.80
27 Plus Diesel oil (per bbl.)	$0.65 –$0.85	$0.65 –$0.85	$0.65 –$0.80

PETROLATUMS

PENNSYLVANIA (Per pound, in barrels, carload lots, f. o. b. Penna. refinery. In tank cars ½c to ¾c per pound less.) Two refiners quoting.

Snow White	6.125– 7.00	6.125– 7.00	6.125– 7.00
Lily White	5.125– 6.00	5.125– 6.00	5.125– 6.00
Cream White	4.125– 5.00	4.125– 5.00	4.125– 5.00
Light Amber	2.625– 2.75	2.625– 2.75	2.625– 2.75
Amber	2.375– 2.50	2.375– 2.50	2.375– 2.50
Red	1.875– 2.25	1.875– 2.25	1.875– 2.25

PETROLEUM COKE

****OKLAHOMA** (F. o. b. Oklahoma refineries)

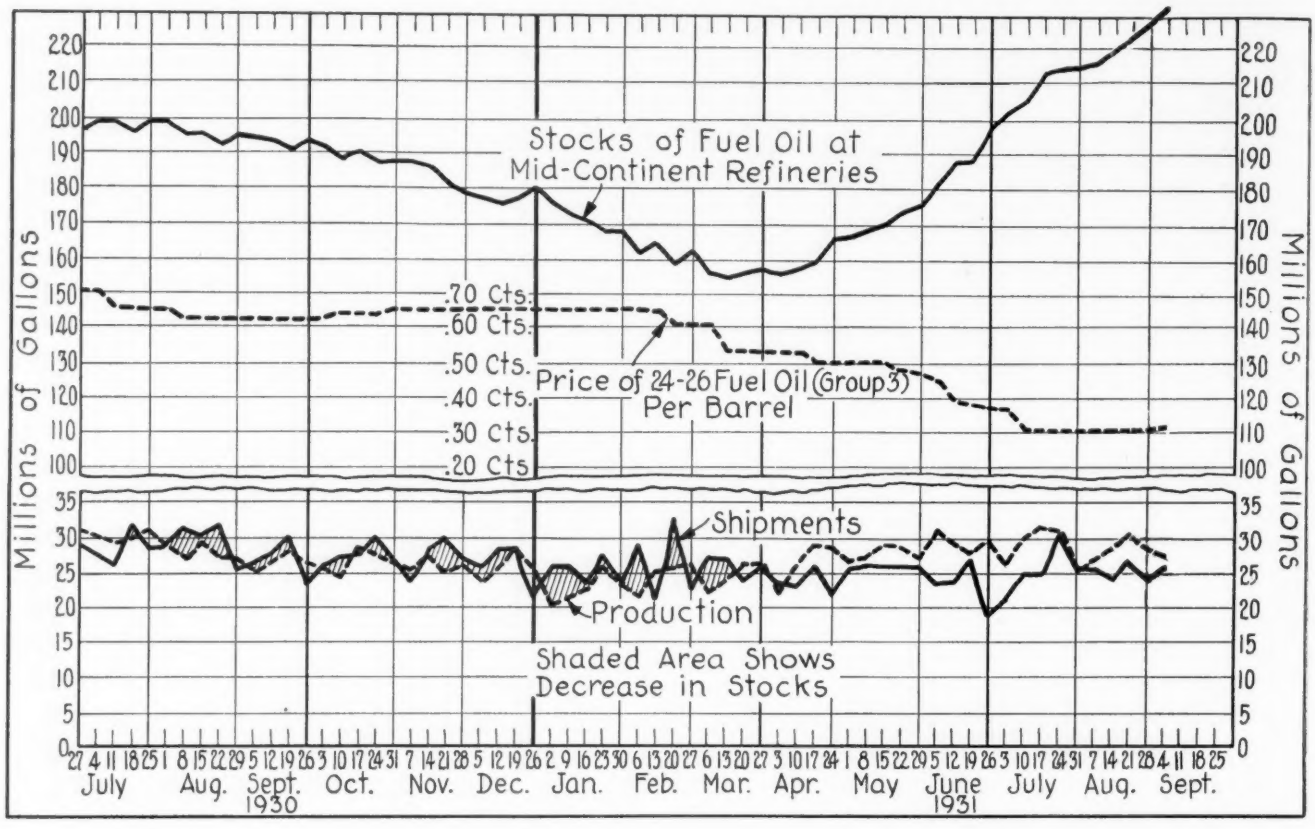
(Per ton in car lots)

Lump	$3.00 –$4.00	$3.00 –$4.00	$3.00 –$4.00
Still run	$2.00 –$3.00	$2.00 –$3.00	$2.00 –$3.00
Breeze	$0.75 –$1.50	$0.75 –$1.50	$0.75 –$1.50

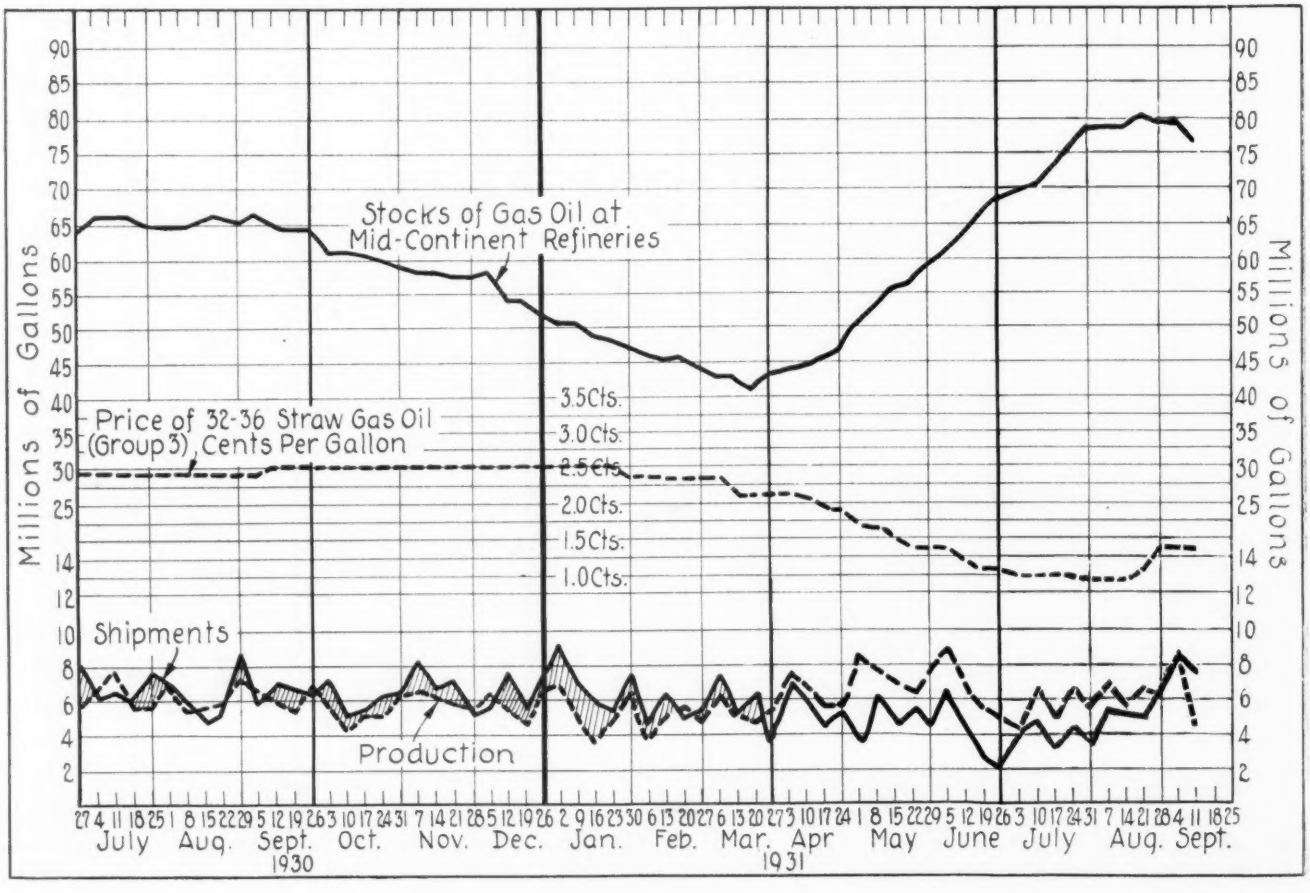
****Prices represent Quotations and Sales**

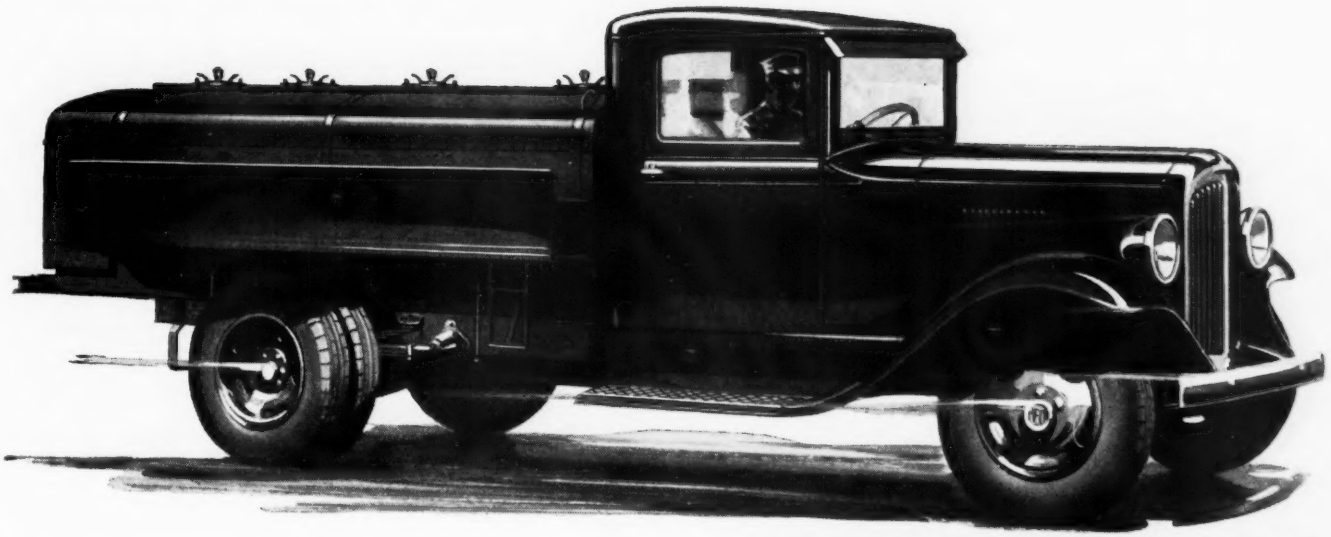
Barometer of Mid-Continent Refinery Market—Week Ending September 11

Charted Course of Prices, Production, Shipments, Stocks of Principal Refined Products, Week by Week, From Reports Made by 93 Plants to National Petroleum News

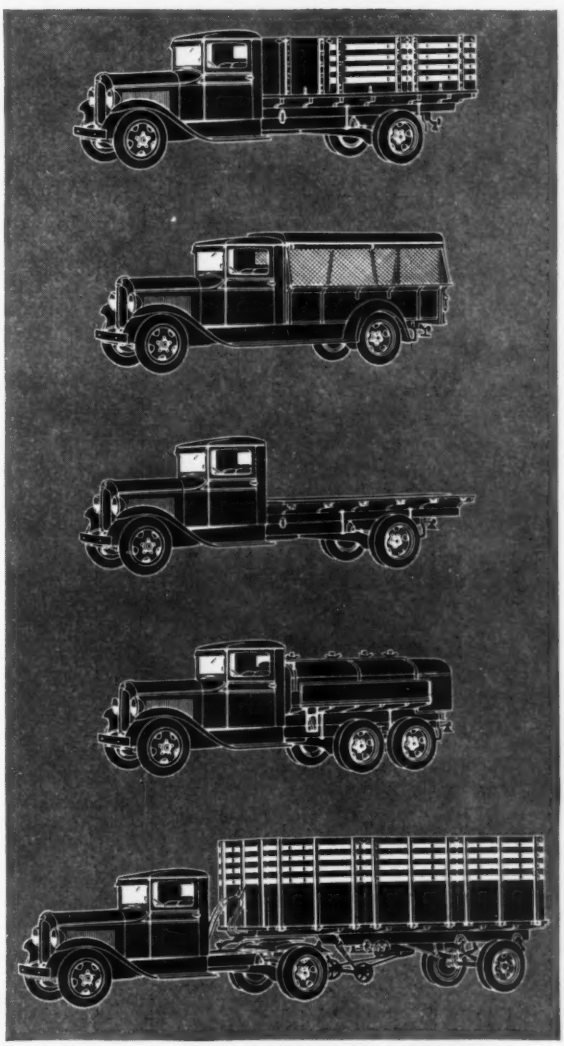


Fuel oil stocks figure, which runs out of the chart, for week ended Sept. 4 is 230,670,000 gallons





Perfectly Suited for Petroleum Haulage



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NATIONAL PETROLEUM NEWS
700 Penton Bldg.
Cleveland, Ohio

California Refinery Market

Eastern Buyers Show Interest

LOS ANGELES, Sept. 12

THE action of Standard of California, followed by Union Oil Co., in posting prices for bulk gasoline of 65 octane number and above for shipment to the East coast, was looked upon by members of the local trade more as a gesture to indicate prices that might prevail in the event Gulf bulk and Atlantic seaboard tank car markets continued their upward trend.

However, under present conditions and failing improvement in these other sections of the country, it was believed California refiners, with considerable gasoline stocks on hand, could be induced to sell bulk U. S. Motor at prices ranging from 4.25 to 4.50 cents. These are nominal quotations only, as no actual spot sales or quotations were reported during the week. Numerous inquiries for California commodities were reported made by eastern buyers during the week.

Demand for cased goods was light although several traders expressed the opinion that this business would show some improvement toward the end of the month.

In domestic markets, price cutting by large and small independent refiners in the Los Angeles basin area came to a head the past week when tank truck and trailer deliveries of gasoline were reported at prices ranging from 4.75 to 5.50 cents, exclusive of tax, a shading of approximately 2 cents of the prices quoted a week ago.

Refinery rack quotations by the independent assumed practically the same range with the average nearer 5 to 5.50 cents. Major refiners quoted 8 to 8.50 cents at the rack and 8.50 cents in tank truck and trailer deliveries. As a result of the wide differential between the independent and major products, retail gasoline prices in the southern California area ranged from 10 to 16 cents with the average on gasoline sold around 12.50 to 13.50 cents.

For movement into adjoining states, quotations were reported at 5 to 6 cents, generally, with indications several refiners would shade the lower figure on firm offer.

Practically no change was noted in quotations on natural gasoline and heavy oils.

Fourth "Petroleum Facts" Out

NEW YORK—The fourth edition of "Petroleum Facts and Figures," yearbook of the petroleum industry published by the American Petroleum Institute, is being published and will be available around Sept. 10.

This edition contains more than 260 pages of pertinent information concerning all branches of the industry and statistical matter. Among new subjects covered are crude oil and gasoline prices, production and uses of asphalt, and a complete review of state gasoline taxation.

Oil Courses at New York University

NEW YORK, Sept. 11.—With problems of oil property management and production being of keener interest to the industry now than perhaps ever before, A. Wellington Taylor, dean of New York University, has announced two practical courses on the oil business this fall at the university.

One is on the oil industry and company operations, dealing with the fundamental aspects and problems of the American oil industry. The other course is called the oil marketing executive's course, primarily a discussion course covering both the technical and commercial aspects of oil marketing.

Both courses will be given by Prof. Ernest R. Lilley, author of The Oil Industry, The Geology of Petroleum and Natural Gas, and other oil books.

Wotowitch Elected Head Of Fuel Committee

CLEVELAND.—Richard A. Wotowitch, Cities Service Oil Co., was elected chairman of the executive committee on fuels and lubricants, at the meeting of the Aeronautical Chamber of Commerce here recently.

Other members of the committee are Major E. E. Allen, Standard Oil Co. of New Jersey; G. French, Sinclair Refining Co.; A. L. Beale, Vacuum Oil Co.; F. Shipman, The Texas Co.; R. H. McLaren, Gulf Refining Co.; and Fred Foster, Richfield Oil Co.

A specific branch of the aviation industry has been assigned to each committee member. Each member in turn will select his committee, and through this type of organization a greater range of initiative will be given committee members. It is hoped that the

committee will create a better understanding between the aviation and oil industries.

The committee is one of the most important in the aviation industry as it deals with fuels and lubricants for all types of aircraft as well as to coordinate such efforts with governmental and aeronautical organizations.

Pennsylvania Markets

Prices Unsettled Following Crude Advance

CLEVELAND, Sept. 14.—The western Pennsylvania refinery market was somewhat unsettled following the 15-cent advance in crude prices Sept. 12. Up to this writing, little change had been noted in general market prices for refined oils as result of the higher crude. Prices of most oils gained considerable ground in earlier trading last week.

Bright stock remained relatively scarce and prices advanced 0.5 to 1 cent a gallon. Consistent buying of this product during the past several weeks has kept the market clear of any surplus.

Few open market sales of cylinder stocks were reported. The bulk of movement of 600 steam refined was against contracts and refiners were running only small lots of the higher flash stocks. Quotations advanced 0.5 cent generally with buyers and sellers alike reporting prices largely nominal.

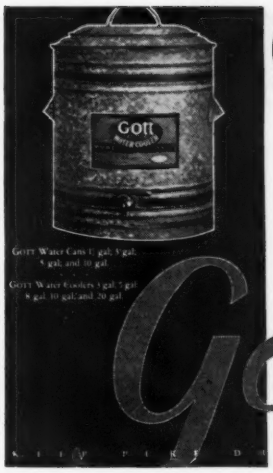
Neutral oils prices advanced 0.5 to 1 cent a gallon. There was heavy buying of the 150 No. 3 color oil. The minimum for this grade advanced from 16.50 to 17.50 cents.

Buying of gasoline eased off slightly. Prices, however, remained fairly steady. Kerosine was a shade more active. Fuel oil was offered more freely in one or two districts. Increased buying of wax was reported.

Penna. Oil Man Dies Of Heart Attack

CLEVELAND, Sept. 14.—Myron Evans, well known among the Pennsylvania oil trade, died this morning at Ohio Valley hospital, Bellevue, near Pittsburgh. Mr. Evans entered the hospital only last week and according to early reports death was the result of an heart attack.

Mr. Evans was 38 years old. He was vice-president in charge of sales of the recently organized Ultra-Penn Refining Co., Butler, Pa. For about a year and a half he was with Valvoline Oil Co. at East Butler and for ten years prior to that time he had been sales manager of the Island Petroleum Co., Pittsburgh.



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60/65 @ 210	" 0° F.
75/80 @ 210	" 0° F.
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Eastern Domestic Markets

Gasoline Prices Generally Steady

Staff Special
NEW YORK, Sept. 12

WHOLESALE gasoline prices were well maintained along the Atlantic seaboard during the week ended Sept. 12. The advances in prices for tank wagon delivery in the New Jersey and New York Standard's territories gave all wholesale prices a good foothold at the higher levels. Gasoline in almost every instance was quoted at 6 cents in the key markets.

Several sore spots continued to exist in the New York company's territory particularly Albany, Troy, Utica, and Binghamton. Competitive service station prices prompted the New York Standard to reduce prices fractionally at these points. The company has also introduced a "third grade product" in distress markets. This gasoline is colored green and is offered at prices comparable with those of competitive sellers.

The tank car market at New York harbor was quite definitely established at 6 cents throughout the week. While sellers reported that the volume of business closed at that figure was not great, it was enough to create a satisfactory turnover. No price shading was reported. Most jobbers had filled their storage with gasoline at prices slightly under the present level just before the advance. The lower octane goods was not a favorite in the last week's trading. This gasoline was offered at 5.75 cents, but sales were not numerous.

The use of ethyl-fluid in regular gasoline to raise the octane rating marked another step forward in the improvement of motor fuels. The Ethyl Gasoline Corp. has permitted the Imperial Oil, ltd. of Canada to add ethyl-fluid to regular gasoline to bring the octane rating up to a minimum of 65. It was stipulated that not more than one and one half cubic centimeters of the fluid should be added; the name Ethyl was not to be used; the color is to be green, and the resultant octane number must be eight numbers lower than Ethyl gasoline. The policy of permitting the use of this fluid under similar conditions in the United States was being considered.

The Philadelphia and Baltimore markets were well maintained at 6 cents for the 65 octane gasoline. Some lower octane goods was available at 5.75 cents in Baltimore, but its sale was not encouraged by the marketers. A few cars were sold out of Baltimore at 5.50 cents, but this sale was the exception rathe than the rule.

On Sept. 10 Atlantic Refining Co. advanced tank wagon and service station prices of gasoline at Philadelphia 1 cent bringing the price up to the statewide level. The marketers of the third grade gasoline advanced regular gasoline in a like amount but left the third grade unchanged.

New England tank car markets were unchanged at the posted prices: Boston and Providence 6.25 cents; Portland 6.50 cents. Buying at these prices was slow. Storage had been filled in most instances and the return of supplying at posted prices from the policy of verbal differentials under the tank wagon market discouraged buying on a larger scale. Tank car buyers at the posted prices have about a 1.50-cent margin under the existing tank wagon prices.

Heating oil prices remained generally unchanged. Gas oil, 28-30 gravity, was quoted at 3.50 cents at New York and 3.75 cents Boston. Furnace oil was offered at 4.50 cents in both markets. Bunker oil, Grade C, remained unchanged at $0.70 per barrel and Diesel oil at $1.40 per barrel.

The Globe Machinery & Supply Co., Des Moines, Ia., manufacturer of the Globe auto hoist, has developed a new type of wheel stop for use on the roll-on type of hoist. It will be furnished as standard equipment on hoists.

When the hoist is lowered to the ground level, the wheel stop lays flat on the channel. When the hoist is raised, the weight of the hinged ramp raises the automatic wheel stop so that it serves as a guard against the car rolling off the super-structure.

Gulf Coast Markets

Cargo Buying Continues Light

Staff Special
NEW YORK Sept. 12

BULK markets at the Gulf continued to mark time as far as any large buying was concerned during the week. Prices asked for the lower end point gasolines were unattractive to foreign buyers. Domestic cargo buyers found that prices for U. S. Motor could be shaded only slightly.

Foreign buyers continued to direct business toward Rumanian suppliers who are still disposed to sell under the American market. Information from foreign sources indicated that while Rumanian refiners had advanced their price, they were inclined to quote a 0.25 to 0.50-cent under the U. S. Gulf market. The resumption of crude production in East Texas, it was said, would soon put the refiners at the Gulf in a better position to handle export business.

Domestic buyers last week encountered a stiff market at 5 cents for U. S. Motor with a 65 and above octane rating. One cargo was purchased at that price. During the week cargo of the same quantity was sold at 4.875 cents. Prices indicated at the end of the week were approximately 4.75 cents, but it was doubtful whether that figure could be shaded.

The market for cased goods continued quiet. There was almost a complete dearth of inquiry or sales of these products. Prices remained generally unchanged.

The gas oil market likewise showed little change from the 2.25-cent level. Cargo lots of Grade C bunker oil, also showed little improvement. Negotiations indicated a disposition to shade recent quotations of $0.45 per barrel.

Wax Markets

Demand Quiet

NEW YORK, Sept. 12.—Wax markets at New York and New Orleans continued to mark time during the past week. Trading proceeded along narrow lines, purchases being confined to small lots in both foreign and domestic circles.

Small quantities of white scale were ordered at 1.875 cent per pound. While it was doubted whether large quantities could be purchased at this price, there was no broad buying to test the market. Several sellers indicated their position early in the week to be solidly at 2 cents for scale waxes, these grades sold under that figure before the week ended. Prices for all grades remained generally unchanged.

On The Lazy Bench

Cadillac, Buick, Ford, Austin

When tourists drive through Phoenix on their way to Tucson the following conversations are typical:

Cadillac drives up, chauffer says, "How far is it to Tucson?"

"One hundred and forty miles," is the reply.

"Give me twenty gallons of gas and a gallon of oil."

Buick: "How far is it to Tucson?"

"One hundred and forty miles."

"Give me ten gallons of gas and one-half gallon of oil."

Ford: "How far is it to Tucson?"

"One hundred and forty miles."

"Give me two quarters of water and a bottle of 3-in-1 oil and hold this son-of-a-gun until I get in."

Austin: "How far it is to Tucson?"

"One hundred and forty miles."

"Give me an aspirin tablet and a bottle of pop."

—*Skelly News*
Skelly Oil Co.

* * *

Another Austin Joke

And here's another one, and don't say we didn't warn you:

The proud owner of the Austin car offered to take a friend into the country. The offer was accepted, and off they went at a very fair pace.

After some time the friend turned to the driver and said: "I say, old man, when do we reach the country?"

"Country?" replied the other. "Why, we're in the country now."

"But hang it all," said the passenger, "all I have seen is that beastly wall on each side of us for miles."

"Wall, indeed!" said the owner, "that's the curb."

* * *

Not long after serving a three-month sentence for chicken stealing, "Happy" Allen, a negro, was back in court charged with aother poultry raid.

"What did I tell you about stealing other folks' chickens the last time you were here?" demanded the judge.

"Ah didn't steal no chickens," protested "Happy."

"Didn't steal any chickens?" echoed the judge, "Well, what are you here for, then?"

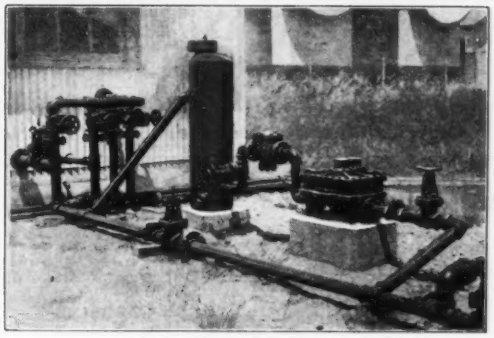
"Ah stole ducks this time, judge," said "Happy," hopefully.

"Four months this time," barked the judge. "Next case."

* * *

Pa Tourist: "Just think, ma, that brick temple is 3,000 years old."

Ma: "Aw gwan, it's only 1931 now."



PLANT RECEIPTS

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The photograph shows a typical installation with a GRANBERG METER CORP. Air Separator, Strainer and Meter. The Air Separator prevents air from being pumped through the meter when emptying Tank Cars or Transport Trucks.

Literature mailed on request.

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WAX—PETROLEUM COKE
CYLINDER—ENGINE—CORDAGE

Gulf Refining Company

General Sales Offices:
PITTSBURGH, PA.

District Sales Offices: **New York, Boston, Philadelphia, Louisville, Atlanta, Houston, New Orleans**

Complete Seaboard Market

Export Markets for whole year given in OIL PRICE HANDBOOK. Each volume carries refinery, tank wagon, crude and export markets—complete for the whole year)

Eastern Domestic Market

(Prices for tank car lots, f. o. b. refinery or seaboard terminal, representing majority of sales and quotations. Prices shown below do not include inspection tax levied in Florida and South Carolina.)

U. S. MOTOR GASOLINE, Below 65 Octane Number

	Prices Sept. 14	Prices Sept. 8	Prices Aug. 31
New York Harbor	5.75 – 6.00	5.50 – 5.75	5.25 – 5.50
Philadelphia District	6.00	5.50 – 5.75	5.25 – 5.50
Baltimore District	5.75 – 6.00	5.50 – 5.75	5.25 – 5.50
U. S. MOTOR GASOLINE, 65 Octane Number and Above			
New York harbor	6.00	5.75 – 6.00	5.50 – 6.00
Portland district	6.50	6.50	6.50
Boston district	6.25	6.25	5.75 – 6.25
Providence district	6.25	6.25	5.75 – 6.25
Philadelphia district	6.00	6.00	5.50 – 6.00
Baltimore district	6.00	6.00	5.50 – 6.00
Norfolk district	6.00	6.00	5.50 – 6.00
Charleston district	6.00	6.00	5.50 – 6.00
Savannah district	6.00	6.00	5.50 – 6.00
Jacksonville district	6.00	6.00	5.50 – 6.00
‡DOMESTIC AVIATION GASOLINE			
New York harbor	9.50 –12.00	9.50 –12.00	9.50 –12.00
Philadelphia	9.50 –12.00	9.50 –12.00	9.50 –12.00
Baltimore	11.00 –12.00	11.00 –12.00	11.00 –12.00
Boston	11.50 –13.00	11.50 –13.00	11.50 –13.00

‡Prices are based on U. S. Gov't. specifications or better. Present Gov't. specifications require distillation range of 5% recovery at not more than 167°F. and not less than 122°F.; 50% recovery at 221°; 90% at 311°; 96% at 347° end point 374°F. Gasoline of fighting grade specifications in some instances sells at a premium over domestic aviation grade. Prices represent majority of quotations.

WATER WHITE KEROSINE			
New York harbor	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
Philadelphia district	4.75 – 5.00	4.75 – 5.00	4.75
Baltimore district	4.75 – 5.00	4.75 – 5.00	4.75 – 5.00
GAS OIL: 28-34 Gravity			
New York harbor	3.50	3.50	3.50
Boston district	3.75	3.75	3.75
FURNACE OIL: 36-40 Gravity			
New York harbor	4.50	4.50	4.50
Boston district	4.50	4.50	4.50
GRADE C BUNKER OIL (Lighterage 5c per bbl. additional)			
New York harbor	$0.70	$0.70	$0.70
Boston district	$0.70	$0.70	$0.70
DIESEL OIL			
New York harbor	$1.40	$1.40	$1.40

New York Export Market

(Lubricating oils are per gal. in bbls. F.a.s. New York)

	Sept. 14	Sept. 8	Aug. 31
CYLINDER OILS (Pennsylvania Products)			
Bright stock, No. 8 color	35.50 –36.50	35.50 –36.00	35.00 –36.00
Bright stock, No. 6½ color diluted	34.50 –35.50	34.50 –35.00	34.00 –35.00
600 D filtered	28.00 –29.00	28.00 –29.00	27.00 –28.00
600 Warren E filtered	25.00 –26.00	24.50 –25.50	23.00 –23.50
600 stm. refd. unfiltered	20.00 –21.00	20.00 –21.00	19.00 –20.00
650 stm. refd. unfiltered	23.00 –23.50	22.00 –23.50	21.00 –23.50
600 flash steam refined	23.00 –24.00	22.50 –23.00	21.00 –22.00
630 flash, steam refined	28.00 –30.00	26.00 –28.00	26.00
RED PARAFFIN OILS (Vis. 100°)			
300 vis. No. 6½ color	17.00 –20.00	17.00 –20.00	17.00 –20.00
250 vis. No. 6 color	16.50 –17.50	16.50 –17.50	16.50 –17.50
200 vis. No. 6 color	14.75 –17.00	14.75 –17.00	14.75 –17.00
PALE PARAFFIN OILS (Vis. 100°)			
230 vis. No. 3¼ color	21.50	21.50	21.50
180 vis. No. 3¼ color	18.00 –20.00	18.00 –20.00	18.00 –20.00
100 vis. No. 2¼ color	12.50 –15.00	12.50 –15.00	12.50 –15.00

Wax Market

(Melting points are A.M.P. method. Prices in cents per pound, f.a.s. carload lots.)

NEW YORK	Sept. 14	Sept. 8	Aug. 31
124-126 Yellow crude scale	1.80 – 1.85	1.80 – 1.85	1.80 – 1.85
122-124 White crude scale	1.875– 1.90	1.875– 1.90	1.875– 1.90
124-126 White crude scale	1.875– 1.90	1.875– 1.90	1.875– 1.90
123-125 Fully refined	2.875– 3.00	2.875– 3.00	2.875– 3.00
125-127 Fully refined	2.90 – 3.00	2.90 – 3.00	2.90 – 3.00
128-130 Fully refined	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
130-132 Fully refined	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
133-135 Fully refined	4.25 – 4.375	4.25 – 4.375	4.25 – 4.375
135-137 Fully refined	4.50 – 4.625	4.50 – 4.625	4.50 – 4.625
NEW ORLEANS			
124-126 Yellow crude scale	1.80 – 1.85	1.80 – 1.85	1.80 – 1.85
122-124 White crude scale	1.875– 1.90	1.875– 1.90	1.875– 1.90
124-126 White crude scale	1.875– 1.90	1.875– 1.90	1.875– 1.90
123-125 Fully refined	2.875– 3.00	2.875– 3.00	2.875– 3.00
125-127 Fully refined	2.90 – 3.00	2.90 – 3.00	2.90 – 3.00
128-130 Fully refined	3.00 – 3.125	3.00 – 3.125	3.00 – 3.125
130-132 Fully refined	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
133-135 Fully refined	4.25	4.25	4.25

Gulf Coast Bulk Market

(Prices are f. o. b. Gulf oil terminals representing sellers' opinions covering bulk shipments of 20,000 barrels or more, for export and / or coastwise shipment unless otherwise noted.)

GASOLINE	Prices Sept. 14	Prices Sept. 8	Prices Aug. 31
U. S. Motor	4.75 – 5.00	*5.00 – 5.25	*5.00 – 5.25
60-62, 400 e.p.	4.875– 5.125	*5.125– 5.375	*5.125– 5.375
61-63, 390 e.p.	*5.00 – 5.25	*5.25 – 5.50	*5.25 – 5.50
64-66, 375 e.p.	4.75 – 5.00	*5.50	*5.50
U. S. Motor, (cases cargoes)	$1.50	$1.50	$1.50
64-66, cases (cargoes)	$1.60	$1.60	$1.60
*Nominal.			
KEROSINE			
44 water white	3.75 – 4.00	3.75 – 4.00	3.75 – 4.00
41-43 prime white	3.25 – 3.50	3.25 – 3.50	3.25 – 3.50
Water white, cases (cargoes)	$1.40	$1.40	$1.40
Prime white, cases (cargoes)	$1.30	$1.30	$1.30
GAS & BUNKER OILS			
*26-30 translucent gas oil	2.25 – 2.50	2.25 – 2.50	2.50 – 2.75
*30 plus translucent gas oil	2.25 – 2.50	2.25 – 2.50	2.50 – 2.75
Grade C bunker oil, for ships' bunkers, per bbl.	$0.55	$0.55	$0.55
Grade C bunker oil, per bbl. in cargoes	$0.45 –$0.50	$0.45 –$0.50	$0.45 –$0.50

*Less than ½ of 1% sulphur
†Represents sales only.

MEXICAN CRUDE AND BUNKER OILS (f. o. b. Steamer, Tampico)

Heavy Panuco crude taxes to be paid, per bbl.	$0.45	$0.45	$0.45
Grade C bunker oil for bunkering, taxes paid, per bbl.	$0.60	$0.60	$0.60

SOUTH TEXAS LUBRICATING OILS (Viscosity at 100°F. cold test 0 Tanker, f. o. b. Gulf oil terminals.)

100 vis. No. 2 unfiltered pale	4.375– 5.00	4.375– 5.00	4.375– 5.00
200 vis. No. 3 unfiltered pale	6.00 – 7.00	6.00 – 7.00	6.25 – 7.00
300 vis. No. 3 unfiltered pale	7.625– 8.00	7.625– 8.00	7.625– 8.00
500 vis. No. 3½ unfiltered pale	8.25 – 9.00	8.25 – 9.00	8.25 – 9.00
750 vis. No. 4 unfiltered pale	9.25 –10.00	9.25 –10.00	9.25 –10.00
1200 vis. No. 4 unfiltered pale	12.00 –13.00	12.00 –13.00	12.00 –13.00
200 vis. No. 5-6 red oil	5.25 – 6.00	5.25 – 6.00	5.25 – 6.00
300 vis. No. 5-6 red oil	6.25 – 7.00	6.25 – 7.00	6.25 – 7.00
500 vis. No. 5-6 red oil	7.25 – 8.00	7.25 – 8.00	7.25 – 8.00
750 vis. No. 5-6 red oil	8.25 – 9.00	8.25 – 9.00	8.25 – 9.00
1200 vis. No. 5-6 red oil	13.25 –13.75	11.00 –12.50	11.00 –12.00

Pacific Export Market

(Quotations are at seaboard, Los Angeles, in cargo lots, cents per gallon, except where otherwise noted.)

	Sept. 14	Sept. 8	Aug. 31
Gasoline, U. S. Motor, 53-55 Gravity	4.25 – 5.00	4.375– 5.00	4.00 – 4.50
Gasoline, U. S. Motor-blends and special cuts	4.50 – 5.25	4.50 – 5.25	4.50 – 5.25
Gasoline, 400 e.p. blend	4.75 – 5.50	5.00 – 5.50	4.75 – 5.50
Gas oil, 30-34 per bbl.	$0.85 –$0.90	$0.85 –$0.90	$0.85 –$0.90
Diesel Oil, 27 plus, per bbl.	$0.85 –$0.90	$0.85 –$0.90	$0.85 –$0.90
Bunker oil, 14-18 per bbl.	$0.55 –$0.70	$0.55 –$0.70	$0.55 –$0.70
Fuel oil, 14-18 per bbl.	$0.55 –$0.80	$0.55 –$0.80	$0.55 –$0.80
Kerosine, 38-40 w.w., 125-150 flash, per gal.	4.25 – 4.75	4.25 – 4.75	4.25 – 5.00
Cased Goods			
Gasoline, U. S. Motor	$1.45 –$1.55	$1.45 –$1.55	$1.45 –$1.55
Gasoline, 400 e.p. blend	$1.55 –$1.65	$1.55 –$1.65	$1.55 –$1.65
Kerosine, 38-40 w.w., 125-150 flash	$1.40 –$1.45	$1.40 –$1.45	$1.40 –$1.45

Tanker Rates

(Approximate tanker freight rates to Continental ports, in shillings per ton of 2240 pounds, British sterling; to American ports, cents per barrel.)

	Sept. 14 Crude &/or Fuel	Sept. 14 Refined Oil &/or Spirits
Calif. to U. K. or Continental ports*	†15	††15
Gulf to U. K. or Continental ports*	9	9
North Atlantic to U. K. or Continental ports*	7/6	7/6
Calif. to North Atlantic ports (not E. of N.Y.)	$0.45-$0.47	$0.45-$0.47
Gulf to North Atlantic ports (not E. of N. Y.)**	14-15	15

*Continental ports in the range between Bordeaux and Hamburg, both inclusive. **Venezuela loading same rate, for Tampico 2c to 3c per bbl. additional. †Last paid 12/6; owners ask 15. ††Last paid 11/6; owners ask 15.

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2730 Spring Grove Ave. **Cincinnati, Ohio**

1031

Tank Wagon, Service Station Markets for Gasoline and Kerosine

(OIL PRICE HANDBOOK has t.w. and s.s. markets for a whole year, arranged for quick reference)

These Prices in Effect September 14, 1931, as Posted by Principal Marketing Companies

S.O. NEW JERSEY TERRITORY

	Gasoline Total				Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Atlantic City, N. J.	11.7	3	14.7	15.7	11.5
Newark, N. J.	10.7	3	13.7	14.7	10.5
Annapolis, Md	11.2	4	15.2	16.2	11
Baltimore, Md	10.4	4	14.4	15.4	9.5
Cumberland, Md	12.2	4	16.2	17.2	12
Washington, D. C.	10.9	2	12.9	13.9	10.7
Danville, Va	12	5	17	18	11.8
Norfolk, Va	10.5	5	15.5	16.5	10
Petersburg, Va	11.5	5	16.5	17.5	11.3
Richmond, Va	10.9	5	15.9	16.9	10.7
Roanoke, Va	12.2	5	17.2	18.2	12
Charleston, W. Va	11.7	4	15.7	16.7	11.5
Keyser, W. Va	12.3	4	16.3	17.3	12.1
Parkersburg, W. Va	10.4	4	14.4	15.4	10.2
Wheeling, W. Va	11.6	4	15.6	16.6	11.4
Charlotte, N. C.	12.5	6	18.5	19.5	12.3
Hickory, N. C.	12.8	6	18.8	19.8	12.6
Mt. Airy, N. C.	12.7	6	18.7	19.7	12.5
Raleigh, N. C.	12.4	6	18.4	19.4	12.2
Salisbury, N. C.	12.7	6	18.7	19	12.5
Charleston, S. C.	10.5	6	16.5	17.5	10.3
Columbia, S. C.	12.4	6	18.4	19.4	12.2
Spartanburg, S. C.	12.7	6	18.7	19.7	12.5

Note: 2c per gallon discount off retail t.w. price of gasoline to dealers thru S. O. New Jersey territory, except Maryland, New Jersey and Washington, D. C. where discount is 3c.

S. O. NEW YORK

Greater New York City:					
Boroughs of Manhattan, Bronx, Queens & Kings	12.3	2	14.3	16.3	10
Borough of Richmond	12.7	2	14.7	16.7	11
Albany, N. Y.	10.6	2	12.6	13.6	10.5
Buffalo, N. Y.	10	2	12	12	10
Rochester, N. Y.	12	2	14	14	10
Syracuse, N. Y.	10	2	12	13	9.5
Boston, Mass.	10.5	3	13.5	14.5	10
Augusta, Me.	12.8	4	16.8	17.8	12.8
Manchester, N. H.	11.4	4	15.4	16.4	10
Burlington, Vt.	13.3	4	17.3	17.3	11
New Haven, Conn.	12.6	2	14.6	15.6	10
Providence, R. I.	10.1	2	12.1	13.1	10

Discounts on gasoline: 2c per gal. off posted t.w. price to dealers, thru territory, except 3c to dealers in New York City, effective Feb. 20, 1931.

ATLANTIC REFINING

Pittsburgh, Pa.	10	3	13	14	11
Philadelphia, Pa.	10	3	13	14	11
Allentown, Pa.	10	3	13	14	11
Erie, Pa.	10	3	13	14	11
Scranton, Pa.	10	3	13	14	11
Altoona, Pa.	10	3	13	14	11
Dover, Del.	10	3	13	14	11
Wilmington, Del.	10	3	13	14	11
Boston, Mass.	10.5	3	13.5	14.5	10
Springfield, Mass.	11.5	3	14.5	15.5	10
Worcester, Mass.	11.3	3	14.3	15.3	10
Fall River, Mass.	11.1	3	14.1	15.1	10
Providence, R. I.	10.7	2	12.7	13.7	10
Hartford, Conn.	12.5	2	14.5	15.5	10
New Haven, Conn.	12.6	2	14.6	15.6	10
Atlantic City, N. J.	11.7	3	14.7	15.7	10.5
Camden, N. J.	10.8	3	13.8	14.8	9.6
Trenton, N. J.	11.2	3	14.2	15.2	10
Annapolis, Md	11.2	4	15.2	16.2	10
Baltimore, Md	10.4	4	14.4	15.4	8.5
Hagerstown, Md.	11.9	4	15.9	16.9	10.7
Richmond, Va.	10.9	5	15.9	16.9	9.7
Wilmington, N. C.	10.6	6	16.6	17.6	9.4
Brunswick, Ga.	13	6	19	19	*14
Jacksonville, Fla.	10	7	17	17	12

Note: The above prices are subject to discounts to dealers and to commercial accounts under contract for one year in accordance with Code of Ethics.

*Georgia kerosine prices include 1c state tax.

S. O. OHIO

Ohio statewide	12	4	16	17	13
Ashtabula, Clark, Defiance, Franklin, Fulton, Henry, Lucas, Marion, Miami, Montgomery, Preble, Ross, Summit and Williams counties:	12	4	16	16	13
Butler and Pickaway counties	11	4	15	15	13

Note: Discount on gasoline to dealers and commercial consumers generally thru Ohio is 2c per gal. off above t.w. prices except in counties where prices are below statewide schedule, discount is generally 3c.

Discount on kerosine to dealers and commercial consumers is 3c per gal. off t.w. price thru Ohio.

Latest Changes in Tank Wagon Prices

Gasoline

Atlantic Refining—S.s. only up 1c, Philadelphia, to 14c, including 3c tax, **Sept. 10.**

T.w. and s.s. up 1c, thru New England, except Boston t.w. up ½c, s.s. cut ½c, **Sept. 3.**

Prices in rest of territory, outside of Pennsylvania and Delaware, up 1c, including New Jersey, Maryland, and Virginia, **Sept. 5;** North Carolina **Sept. 7;** and Georgia and Florida, **Sept. 4.**

S. O. Ohio—T.w. cut 1c, s.s. cut 2c, thru Butler county, both to 15c, including 4c tax, **Sept. 9.**

S. O. Indiana—Stanolind Blue gasoline:

T.w. only cut 1.7c, Detroit, to 11.1c, **Aug. 29;** t.w. and s.s. up 2.2c, both to 13.3c, including 3c tax, **Sept. 9.**

S.s. only cut 2.1c, St. Joseph, to 9.9c, including 2c tax, **Sept. 10.**

S.s. only cut 6/10c, Evansville, to 9c, including 4c tax, **Sept. 11.**

S.s. only cut 1.7c, Sioux City, to 10.9c, including 3c tax, **Sept. 11.**

S.s. only cut 1.1c, Des Moines, to 11.9c, including 3c tax, **Sept. 11.**

S. O. Louisiana—T.w. and s.s. prices advanced in amounts ranging from 1 to 4c, thru territory, **Sept. 8.** Baton Rouge was unchanged.

T.w. cut ½c, s.s. cut 1.5c, New Orleans, both to 15.5c, **Sept. 10.**

Continental Oil—T.w. cut ½c, s.s. cut 3.5c, Twin Falls, both to 20c, including 5c tax, **Sept. 11.** Dealer discount of 3c per gal. off t.w. price put into effect Sept. 11.

Kerosine

S. O. New Jersey—Kerosine advanced 1c, thru territory, **Sept. 14.**

††S. O. KENTUCKY

			Gasoline Total		Oil
	T.W.	Tax	T.W.	S.S.	T.W.
Lexington, Ky.	12	5	17	18	12
Louisville, Ky.	11	5	16	17	10
Paducah, Ky.	11	5	16	17	11
Covington, Ky.	11	5	16	17	11
Jackson, Miss.	11	5	16	16	11.5
Vicksburg, Miss.	9	5	14	14	11.5
Birmingham, Ala ‡‡	10	5	15	15	13
Mobile, Ala.‡	13.5	5	18.5	18.5	10
Montgomery, Ala.*	12	5	17	17	13.5
Macon, Ga.	10	6	16	16	†12
Atlanta, Ga.	10	6	16	16	*†12.5
Augusta, Ga.	12	6	18	19	†14
Savannah, Ga.	12	6	18	18	†12
Jacksonville, Fla.	8	7	15	15	12
Miami, Fla.	12	7	19	21	13
Tampa, Fla.	11	7	18	19	12
Pensacola, Fla.**	12	7	19	20	13

Note: Net price of gasoline to dealers is 2c under posted t.w. price thru S. O. Kentucky territory.

††Above prices in S. O. Kentucky territory are not corrected to show advance of Sept. 4, due to failure of definite information to arrive on time.

*Local privilege tax of 1 cent on gasoline and ½ cent on kerosine at Montgomery included.

†Georgia kerosine prices include 1c state tax.

**Both tank wagon prices include 1c city tax at Pensacola which went into effect Oct. 15, 1926.

‡Mobile gasoline prices include 1c city tax.

‡‡Birmingham gasoline prices include 1c city tax.

*†3c discount off t.w. price of oil at Atlanta, meeting competition.

S. O. INDIANA

‡(Red Crown Gasoline)

Chicago, Ill.	11	3	14	14	9
Decatur, Ill.	11 4	3	14 4	14 4	9
E. St. Louis, Ill.	10 7	3	13 7	13 7	8.2
Joliet, Ill.	11.4	3	14.4	14.4	9
Peoria, Ill.	11 4	3	14 4	14 4	9
Quincy, Ill.	11 2	3	14 2	14 2	8.8
Springfield, Ill.	11 4	3	14.4	14.4	9
Indianapolis, Ind.	11 3	4	15 3	15 3	10.1
Evansville, Ind.	11.1	4	15.1	15.1	9.9
South Bend, Ind.	11.4	4	15 4	15 4	10.2
Detroit, Mich.	11.8	3	14.8	14.8	10.7
Grand Rapids, Mich	11 7	3	14 7	14.7	10.6
Saginaw, Mich.	11.9	3	14.9	14.9	10.8
Marquette, Mich.	11.9	3	14.9	14.9	10.8
Green Bay, Wisc.	11.6	4	15.6	15 6	9.4
Madison, Wisc.	11.3	4	15.3	15.3	9.1
Milwaukee, Wisc.	11.1	4	15.1	15.1	8.9
La Crosse, Wisc.	12.2	4	16.2	16.2	10
Minneapolis, Minn.	12.2	3	15.2	15 2	9.9
Duluth, Minn.	12.5	3	15.5	15.5	9.9
Mankato, Minn	12.1	3	15.1	15.1	9.7
Des Moines, Ia	11.5	3	14 5	14.5	8
Davenport, Ia	11.5	3	14.5	14.5	9.3
Sioux City, Ia	11.1	3	14.1	14 1	8.9
Mason City, Ia.	11 5	3	14.5	14.5	9.3
St. Louis, Mo.	*10.9	2	12.9	12.9	8.3
Kansas City, Mo.	†11.9	2	13.9	13.9	7.6
St. Joseph, Mo.	†11.5	2	13.5	13.5	7.5
Fargo, N. D.	13.9	3	16.9	16.9	11.9
Grand Forks, N. D.	14 2	3	17.2	17 2	12.2
Minot, N. D.	13.9	3	16.9	16.9	11.9
Pierre, S. D.	12	4	16	16	10.4
Huron, S. D.	12 3	4	16.3	16.3	10.7
Wichita, Kans.	9.8	3	12.8	12.8	7.8
Bartlesville, Okla.	8	5	13	16	7

*Includes city tax of ½c.

†Includes city tax of 1c.

‡Stanolind Blue prices are 1.5c under those shown above. At the following points, prices are below normal on Stanolind Blue:

(Stanolind Blue Gasoline)

Detroit, Mich.	10.3	3	13.3	13.3	10.7
Evansville, Ind.	9.6	4	13.6	9	9.9
St. Joseph, Mo.	†8	2	10	9.9	7.5
Des Moines, Ia.	10	3	13	11.9	8
Sioux City, Ia.	9.6	3	12.6	10.9	8.9

†Includes city tax of 1c.

Discounts: Q.D.A., effective May 11, 1931, on gasoline.

Above prices include these inspection fees on both gasoline and kerosine, per gallon: Alabama, 1/40c on gasoline, 1/2c kerosine; Arkansas, 1/20c on both; Florida, 1/8c on both; Illinois, 3/100c on both; Indiana, 2/25c to 1/2c on both; Kansas, 3/50c on both; Louisiana, 1/32c on gasoline; Minnesota, 3/50c on both; Missouri, 1/50c to 1/2c on both; Nebraska 3/100c on both; North Carolina, 1/4c on both; North Dakota, 1/20c on both; Oklahoma, 4/25c on both; South Carolina 1/8c on both; South Dakota, 1/10c on both; Tennessee, 2/5c on gasoline and 1/2c to 4/5c on kerosine; Wisconsin, 1/25c on both.

Kerosine inspection fees only, per gallon: Iowa 7/100c; Michigan, 1/5c to 4/5c per gal.

Tank Wagon, Service Station Markets for Gasoline and Kerosine

These Prices in Effect September 14, 1931, as Posted by Principal Marketing Companies

To re-sellers, thru territory, except Chicago:

	Under 75,000 Gals. Off S.S. Price	75,000 Gals. and Over Off T.W. Price
Ethyl gasoline	3c	4c
Red Crown gasoline	2.5c	3.5c
Stanolind Blue	1.5c	2c

In Chicago, in any quantity, discounts are 4c per gal. on Ethyl gasoline, 3.5c on regular motor fuel grades and 2c on "third" grades, by principal marketing companies, discounts being off service station prices in quantities up to 75,000 gallons, and off t.w. price in quantities of 75,000 gallons and over.

To consumers, thru territory, except Chicago:

	1,000 to 75,000 Gallons Off T.W. Price	75,000 Gals. and Over Off T.W. Price
Ethyl gasoline	3c	4c
Red Crown gasoline	2.5c	3.5c
Stanolind Blue	1.5c	2c

In Chicago, in quantities over 1,000 gallons: Ethyl gasoline, 4c; regular grades 3.5c; "third" grades 2c, all discounts being off tank wagon price.

S. O. NEBRASKA

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Omaha, Neb.	11.25	4	15.25	16.25	9.25
McCook, Neb.	12	4	16	17.75	10.75
Norfolk, Neb.	11.75	4	15.75	16.75	9.75
North Platte, Neb.	12.75	4	16.75	17.75	10.5
Scottsbluff, Neb.	12	4	16	16	10.25

Note: Discounts to dealers, off normal service station prices: Red Crown Ethyl, 3c; Red Crown 2.5c per gal.; Nebraska Blue, 1c.

S. O. LOUISIANA

	Gasoline Posted Retail T.W.	Tax	Total Posted Retail T.W.	Posted Retail S.S.	Oil T.W.
Little Rock, Ark.	11.5	6	17.5	18.5	11
Alexandria, La.	11	*6	17	18	†12
Baton Rouge, La.	10	5	15	16	†12
New Orleans, La.	9.5	*6	15.5	15.5	12
Lake Charles, La.	11	*6	17	18	†12
Shreveport, La.	11.5	5	16.5	17.5	†12
Lafayette, La.	11	*6	17	18	†12
Bristol, Tenn.	13.5	6	19.5	20.5	14
Chattanooga, Tenn.	13	6	19	20	12
Knoxville, Tenn.	13.5	6	19.5	20.5	13.5
Nashville, Tenn.	12.5	6	18.5	19.5	12.5
Memphis, Tenn.	11.5	6	17.5	18.5	11

Note: Discounts in S. O. La. territory: To dealers and commercial consumers from the tankwagon, 2c per gal. off posted retail t.w. price.

*Lake Charles, Alexandria, New Orleans and Lafayette gasoline tax includes 5c state tax and 1c parish tax. New Orleans kerosine price includes 1c parish tax in addition to 1c state tax.

†Kerosine price in Louisiana includes 1c state tax.

MAGNOLIA PETROLEUM

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Muskogee, Okla.	6	5	11	13	8
Oklahoma City	9	5	14	16	7
Tulsa, Okla.	8	5	13	15	8
Fort Smith, Ark.	9.5	†5	14.5	15.5	11
Little Rock, Ark.	10	6	16	17	11
Texarkana, Ark.*	8	*4	12	14	8
Dallas, Tex.	9	4	13	14	8
Fort Worth, Tex.	9	4	13	14	8
Houston, Tex.	8	4	12	14	11
San Antonio, Tex.	8	4	12	14	10
El Paso, Tex.	10	4	14	16	12

*Within city of Texarkana, the state tax on gasoline is 4c per gal. conforming with the Texas state tax. In this district outside of the city the 6c Arkansas tax applies.

†Fort Smith gasoline prices include Oklahoma tax of 5c; outside Fort Smith, Arkansas tax of 6c applies.

CONTINENTAL OIL

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
Denver, Colo.	12	4	16	19	12.5
Pueblo, Colo.	12	4	16	19	12
Grand Junc., Colo.	14	4	18	21	14.5
Casper, Wyo.	11	4	15	18	10
Cheyenne, Wyo.	12.5	4	16.5	19.5	11.5
Butte, Mont.	12	5	17	20	16
Helena, Mont.	16	5	21	24	16
Salt Lake City, Utah	14.5	4	18.5	21.5	16
Boise, Ida.	16.5	5	21.5	24.5	18
Twin Falls, Ida.	†15	5	†20	20	18
Albuquerque, N. M.	12	*6	18	21	14

*Tax includes 5c state tax and 1c city tax.

†3c per gal. off t.w. price at Twin Falls to dealers.

S. O. CALIFORNIA

San Francisco, Cal.	3	13.5	16.5	15.5
Los Angeles, Cal.	3	13	16	15.5
Fresno, Cal.	3	13.5	16.5	17
Phoenix, Ariz.	5	14.5	17.5	20
Reno, Nev.	4	17.5	20.5	19
Portland, Ore.	4	15	18	16.5
Seattle, Wash.	5	16	19	20.5
Spokane, Wash.	5	19.5	22.5	20.5
Tacoma, Wash.	5	16	19	20.5

Note: No discounts off above gasoline prices; tank truck prices are those to resale trade; wholesale prices are generally 6c above tank truck prices, except at Phoenix, 1c.

*Retail prices are those of Standard Stations, Inc., marketing subsidiary of the Standard Oil Co. of California.

CANADA

Per Imperial Gallon, which is 1.2 American Gallons)

	Gasoline T.W.	Tax	Total T.W.	S.S.	Oil T.W.
ONTARIO					
Toronto	17.5	5	22.5	26	18.5
Ottawa	18.5	5	23.5	27	19.5
North Bay	21.5	5	26.5	32	22.5
Fort William	19.5	5	24.5	28	17
Border Cities, including Windsor	17.5	5	22.5	26	16.5
MANITOBA					
Winnipeg	19.5	5	24.5	28	13.5
SASKATCHEWAN					
Regina	23.5	5	28.5	32.5	17
ALBERTA					
Edmonton	24.5	5	29.5	33	18
Calgary	21	5	26	29.5	14.5
BRITISH COLUMBIA					
Vancouver	21.5	5	26.5	27.5	22
QUEBEC					
Montreal	18.5	5	23.5	27	19.5
Quebec City	20.5	5	25.5	29	21.5
Three Rivers	20.5	5	25.5	29	21.5
NEW BRUNSWICK					
St. John	20	5	25	29	22
Moncton	20	5	25	29	22
NOVA SCOTIA					
Halifax	20	5	25	29	22
PRINCE EDWARD ISLAND					
Charlottetown	20	6	26	30	22

NAPHTHA PRICES

	Oleum Spirits	V.M.&P. Naphtha	Cleaner Naphtha
Chicago	10.7	12.7	14.2
Detroit	13.4	14.9	15.7
Kansas City	†11.9	†13.4	†14.2
Milwaukee	12.4	*15.9	*16.7
Minneapolis	**16.7	**18.2	**19
St. Louis	11.6	13.1	13.9
New York		14	20
Boston		17	20

*Includes 2c state tax. †Includes 1c city tax.

**Includes 3c state tax.

Petroleum Spirits (Solvent)

Tank Cars (F.o.b. refinery or seaboard terminal)	
New York Harbor	9.00
Philadelphia district	9.00
Providence	9.50
Tank Wagon or Steel Barrels	
New York City	14
Syracuse	17
Rochester	15
Buffalo	16
Providence	17
Boston	17
Bridgeport	15
Newark	16
Philadelphia	13
Lancaster	17
Altoona	17
Baltimore	17

Note: 2c off above t.w. prices to large buyers in some instances.

Aviation Gasoline Prices

Following are tank wagon prices of aviation gasoline in principal marketing territories showing state and municipal taxes:

S. O. NEW JERSEY

Prices in Effect Sept. 14, 1931

	T.W.	Tax	Total T.W.
Newark, N. J.	14.9	*	14.9
Baltimore, Md.	15.2	4	19.2
Washington, D. C.	15	2	17

*New Jersey road tax of 3c does not apply on aviation gasoline, exemption being claimed at time of purchase.

All above prices are on Stanavo Aviation Gasoline

COLONIAL BEACON OIL CO.

New York City	17.5	2	19.5
Boston, Mass.	19	3	22

S. O. PENNSYLVANIA

Philadelphia, Pa.	15	3	18
Pittsburgh, Pa.	15	3	18
Altoona, Pa.	15	3	18

S. O. OHIO

Thru Ohio	15	4	19

Discounts given by S. O. Ohio: For delivery to airports only; 2,000 gals. or over per month, 1c per gal.; 6,000 gals. or over per month, 2c; 12,000 gals. and over per month, 3c; 24,000 gals. and over per Month, 4c.

S. O. INDIANA

Chicago	14	3	17
Indianapolis, Ind.	14.3	4	18.3
Detroit, Mich.	14.8	3	17.8
Milwaukee, Wis.	14.1	2	16.1
Minneapolis, Minn.	15.2	3	18.2
St. Louis, Mo.	13.4	2.5	15.9
Kansas City, Mo.	13.9	3	16.9
Fargo, N. D.	16.9	3	19.9
Huron, S. D.	15.3	4	19.3
Wichita, Kan.	12.8	3	15.8

In S. O. Indiana territory, buyer pays state and city taxes on aviation gasoline, and if he can get a refund from the state, he does so. Kansas City tax of 3c includes 1c city tax; St. Louis tax of 2.5c includes ½c city tax.

S. O. LOUISIANA

New Orleans, La.	18	6	24
Nashville, Tenn.	20	6	26
Memphis, Tenn.	19	6	25

2c per gal. discount off above posted retail t.w. prices to dealers and commercial consumers.

S. O. NEBRASKA

Omaha	16.25	4	20.25

2c per gal. refund to reseller.

CONTINENTAL OIL CO.

Denver, Colo.	15	4	19
Cheyenne, Wyo.	15.5	4	19.5
Helena, Mont.	19	5	24
Salt Lake City, Utah	17.5	4	21.5
Albuquerque, N. M.	16	*6	22
Boise, Ida.	19.5	5	24.5

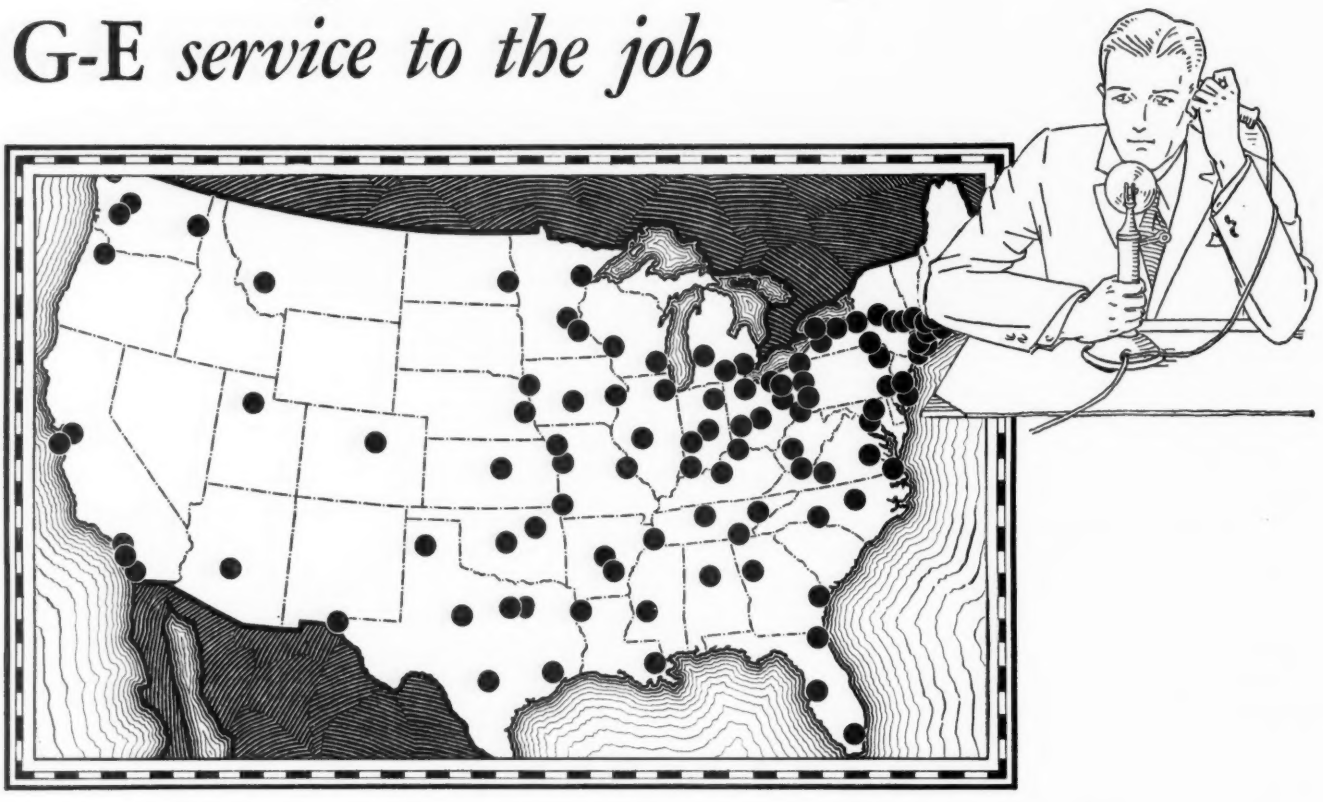
*Tax includes 5c state tax and 1c city tax.

S. O. CALIFORNIA

Phoenix, Ariz.	17.5	4	21.5
Los Angeles, Cal.	16.5	3	19.5
San Francisco, Cal.	17	3	20
Reno, Nev.	21	4	25
Portland, Ore.	17.5	4	21.5
Seattle, Wash.	17.5	3	20.5
Spokane, Wash.	21.5	3	24.5

Note: 4c per gallon added to t.w. price, in S. O. California territory, to customers taking delivery direct into the fuel tank of planes.

Wherever you are . . .
Your telephone will bring
G-E *service to the job*

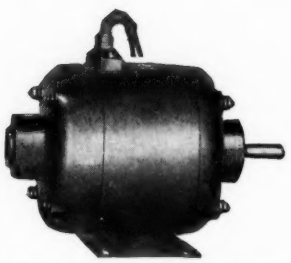


From New York to San Francisco and from north to south — wherever you locate your gasoline dispensing pumps — you are never out of telephone reach of G-E motor service.

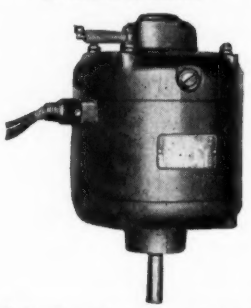
G-E fractional-horsepower motors are carefully designed and built to stay on the job. Every G-E motor carries with it that invaluable asset of freedom from prolonged shutdowns that can be given only by motors of highest quality backed by nation-wide service.

Be far-sighted when buying gasoline dispensers. Ask yourself: is motor service readily available "if and when" needed? Are spare parts carried nearby or will my pumps be laid up for long periods waiting repairs or attention from distant points?

Specify G-E fractional-horsepower motors for your dispensers — they are always a good investment.



G-E fractional-horsepower motor for horizontal operation



G-E fractional-horsepower motor for vertical operation

G-E fractional-horsepower motors for gasoline dispensers are tested and listed by the Underwriters' Laboratories; each motor bears the Underwriters' label indicating its suitability for use in locations where inflammable or volatile liquids, gases, or mixtures of petroleum derivatives are present. They are supplied for either horizontal or vertical mounting in gasoline dispenser cabinets, and are furnished in three sizes; ¼ hp., ⅓ hp., and ½ hp., in the various frequencies and voltages.

210-136

JOIN US IN THE GENERAL ELECTRIC PROGRAM, BROADCAST EVERY SATURDAY EVENING ON A NATION-WIDE N.B.C. NETWORK

GENERAL ELECTRIC

SALES AND ENGINEERING SERVICE IN PRINCIPAL CITIES

Crude Oil Prices (in Effect Sept. 14, 1931)

Crude prices for the whole year in OIL PRICE HANDBOOK published annually

EASTERN FIELDS

Posted by Joseph Seep Purchasing Agency

(All Penna. Grade Crude except Corning, Effective Sept. 12, 1931)

Bradford—Alleghany district (Penna. and New York) (posted by Tide Water Pipe Co., Ltd.) $2.25
Penna. Grade Oil in National Transit Lines.. *1.95
Penna. Grade Oil in Southwest Penna. Pipe Lines 1.80
Penna. Grade Oil in Eureka Pipe Lines (West Virginia) 1.70
Penna. Grade Oil in Buckeye Pipe Lines (Macksburg, O.) 1.60
Corning Grade in Buckeye Pipe Lines (Ohio).. 0.75
(Effective Sept. 4, 1931)
Ragland in Cumberland Pipe Lines (Kentucky) (Effective Jan. 9, 1929) $0.60

Posted by Other Companies

Ashland Refining Co.:
Somerset in Cumberland lines (Kentucky) (Effective Aug. 22, 1931) $0.80
Stoll Oil Refining Co.:
Oil City in Stoll lines (Kentucky) (Effective Aug. 24, 1931) $0.75
*Oil run prior to July 1, 1929 is 5c less per bbl.

MICHIGAN

Postings discontinued in Muskegon field.

(Posted by Pure Oil Co.)

Midland, Midland County (Aug. 23, 1931).. $0.73

CENTRAL STATES FIELDS

Posted by Ohio Oil Co.

Effective Aug. 24, 1931

Wooster	$1.00	Princeton	$0.80
Lima	0.90	Illinois	0.80
Indiana	0.50	West Kentucky	0.75

CANADIAN CRUDE

Posted by Imperial Oil Refineries, Ltd.

Effective Aug. 24, 1931

Petrolia, Ont. $1.80
Oil Springs, Ont. $1.87
(Effective Aug. 25, 1931)
Turner Valley, Alta.:
45-49.9 ..... $2.08 50 and above... $2.65

OKLAHOMA, KANSAS and NORTH TEXAS

Prices of *Stanolind Crude Oil Purchasing Co. (In Oklahoma, Kansas, North and North Central Texas)

Effective Aug. 22, 1931

Below 29	$0.46	35-35.9	$0.60
29-29.9	0.48	36-36.9	0.62
30-30.9	0.50	37-37.9	0.64
31-31.9	0.52	38-38.9	0.66
32-32.9	0.54	39-39.9	0.68
33-33.9	0.56	40 and above	0.70
34-34.9	0.58		

*Prairie Oil & Gas withdrew postings in Oklahoma, Kansas and Texas, Jan. 1, 1931.

Effective Aug. 22, 1931, above prices were met by these companies:

Humble Oil & Refining Co. in Ranger, North Texas, Moran, Mexia, Powell, Boggy Creek, Richland, Wortham and Currie.

The Texas Co., in Oklahoma, North Texas, North Central and Central Texas and North Louisiana.

Carter Oil Co. in Oklahoma and Kansas.

Continental Oil Co., in Oklahoma, Kansas and North Texas.

East Texas

Discontinued by Humble, June 3.

Magnolia Petroleum Co.
(In Oklahoma, Kansas and Texas)

Effective Aug. 22, 1931

Oklahoma:

Cushing, Morrison, Oklahoma City, Seminole, Wewoka and Yale $0.68
Cement, Duncan and Walters 0.60
Healdton 0.37
Hewitt and Graham 0.52

Kansas:

Withdrawn July 22, 1931

Texas:

North and North Central:
Archer, Burkburnett, Comanche, Electra, Henrietta, Olden and Stephens $0.68
East Texas $0.68
East Central Texas:
Thrall (Effective July 24, 1931) $0.40
Central Texas:
Mexia, Wortham, Corsicana Light, Panola county and Lytton Springs $0.64
Corsicana heavy $0.34
Panhandle:
Gray county $0.58
Carson-Hutchinson counties $0.51
West Texas:
Crane, Upton, Howard, Glasscock, and Mitchell counties $0.35
South Texas:
Mirando $0.60
Darst Creek 0.52
Luling 0.34

Louisiana-Arkansas

Effective Aug. 24, 1931

North Louisiana:

Bull Bayou $0.68
Cotton Valley 0.46
Haynesville 0.50
Pine Island 0.58

Arkansas:

El Dorado and Rainbow $0.48
El Dorado, East Field (Calion) $0.45
Smackover $0.45

PANHANDLE TEXAS

Humble Oil & Refining Co.

Effective Aug. 22, 1931

Hutchinson-Carson Counties		Gray County	
Below 35	$0.41		$0.46
35-35.9	0.43		0.48
36-36.9	0.45		0.50
37-37.9	0.47		0.52
38-38.9	0.49		0.54
39-39.9	0.51		0.56
40 and above	0.53		0.58

Above prices met by The Texas Co. on Aug. 22 in Hutchinson, Carson and Gray counties.

WEST TEXAS and NEW MEXICO

Humble Oil & Refining Co.

Effective Aug. 22, 1931

Pecos, Winkler, Crane, Upton, Crockett, Ector, Howard and Glasscock Counties, Tex., and Lea county, N. Mex. $0.35

Aug. 22, 1931, The Texas Co. same prices in Crane, Upton, Winkler and Lea counties as Humble.

SOUTH and SOUTHWEST TEXAS

(Posted by Humble Oil & Refining Co.)

Effective Aug. 22, 1931

Mirando $0.60
Salt Flat 0.52
Darst Creek 0.52
Pettus, Bee County 0.70

(Posted by The Texas Co.)

Effective Aug. 22, 1931

Markham $0.52

NORTH LOUISIANA—ARKANSAS FIELDS

Prices of Standard Oil Co. of Louisiana

Caddo, Homer, Haynesville, Bull Bayou, El Dorado Crichton, De Soto, Sabine, Sarepta and Carterville.

Effective Aug. 24, 1931

Below 29	$0.46	35-35.9	$0.60
29-29.9	0.48	36-36.9	0.62
30-30.9	0.50	37-37.9	0.64
31-31.9	0.52	38-38.9	0.66
32-32.9	0.54	39-39.9	0.68
33-33.9	0.56	40 and above	0.70
34-34.9	0.58		

Smackover $0.45
Urbana ..... Discontinued Aug. 24
*Urania, La. (Effective Aug. 24, 1931) 0.45
†Stephens, Ark.:
Below 29 ..... $0.41
29 and above 0.44

*Urania posted by Louisiana Oil Refining Corp.

†Stephens price effective Aug. 24, 1931 posted by Atlantic Oil Producing Co. and Louisiana Oil Refg. Corp.

*GULF COASTAL

Posted by Humble Oil & Refining Co.

Effective Aug. 22, 1931

Below 25	$0.55	30-30.9	$0.61
25-25.9	0.56	31-31.9	0.62
26-26.9	0.57	32-32.9	0.63
27-27.9	0.58	33-33.9	0.64
28-28.9	0.59	34-34.9	0.65
29-29.9	0.60	35 and above	0.66

Refugio heavy $0.60

*Includes these fields: Barbers Hill, Goose Creek, Hull, Humble, Liberty, Moss Bluff, Mykawa, Orange, Pierce Junction, Raccoon Bend, Refugio light, Sour Lake, Spindletop, Sugarland and West Columbia.

The Texas Co. met above Gulf Coastal schedule Aug. 22, except that it posts these higher grades: 36-36.9, $0.67, 37-37.9, $0.68, 38-38.9, $0.69, 39-39.9, $0.70, 40 and above, $0.71.

Crude Price Changes

(By Telegraph)

PITTSBURGH — Sept. 12 Joseph Seep Purchasing Agency advanced all Pennsylvania grade crude 15 cents, making the fifth consecutive advance in prices this fall. Corning and Ragland were unchanged.

New prices are: Pennsylvania grade crude in National Transit lines, $1.95; in Southwest Pennsylvania Pipe lines, $1.80; in Eureka lines (West Virginia), $1.70; in Buckeye lines, (Macksburg, O.), $1.60 per barrel.

On the same date Tide Water Pipe Co., Ltd. advanced Bradford-Allegany district crude 15 cents, to new price of $2.25 per barrel.

The four previous advances on Pennsylvania crude were: Aug. 29, 5 cents; Aug. 17, 5 cents; Aug. 3, 15 cents; and July 29, 20 cents.

Appointed Indiana Code Chairman

NEW YORK—The new chairman of the Indiana code committee is H. L. Rauch, of the Indianapolis, Ind. office of Indian Refining Co., Inc. Lawrenceville, Ill. Mr. Rauch succeeds W. J. Wilson, of the same company, resigned.

H. Jacobs, Shell Petroleum Corp., St. Louis, has become a member of the middle western region code committee, succeeding J. A. Strong, resigned.

R. W. McDowell, Mid-Continent Petroleum Corp., Tulsa, is a new member of the middle western code committee, according to the American Petroleum Institute.

Correction

Price of 53-55 gravity gasoline in the Pacific Export Market as of Sept. 8 in the Complete Seaboard Market table, page 82, of the Sept. 9 issue, was published erroneously at 4.375 to 4.50 cents. Correct price on Sept. 8 was 4.375 to 5 cents.

That's Dollars And "Sense" Talk

HACKNEY permanent steel barrels have long been famous for their seamless, leak-proof construction; their patented raised openings, which drain the contents to the last drop—or full removable heads, which make emptying and cleaning so easy; their ability to take hard knocks without denting — attractive appearance—and easy handling.

Those are advantages for which many companies would gladly pay a premium. But instead — Hackneys frequently save them more than 40% in their shipping costs.

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1317 Vanderbilt Concourse Bldg. . . New York City
5719 Greenfield Avenue . . . . Milwaukee, Wis.
485 Roosevelt Building . . . . . Los Angeles

Hackney
MILWAUKEE

Crude Oil Prices (in Effect Sept. 14, 1931)

(Prices are per barrel at the well)

(Crude Oil Prices for the whole year in OIL PRICE HANDBOOK published annually)

ROCKY MOUNTAIN FIELDS

(Posted by Midwest Refining Co.)

(Effective Aug. 22, 1931)

Salt Creek, below 29°	$0.46
" " 29-29.9	0.48
" " 30-30.9	0.50
" " 31-31.9	0.52
" " 32-32.9	0.54
" " 33-33.9	0.56
" " 34-34.9	0.58
Salt Creek 35-35.9	0.60
" " 36-36.9	0.62
" " 37-37.9	0.64
" " 38-38.9	0.66
" " 39-39.9	0.68
" " 40 and above	0.70

(Posted by Ohio Oil Co.)

Effective Aug. 24, 1931

Elk Basin, Wyo.	$0.90
Grass Creek Light	0.90
Big Muddy	0.68
Lance Creek	1.05
Rock Creek	0.70
Sunburst, Mont.	0.90

(Posted by *Midwest Refining Co.)

Effective Aug. 24, 1931

Cat Creek, Mont.	$0.90
Hogback, N. Mex.	0.80
Hobbs, N. Mex.	0.35

*Midwest also posts Elk Basin and Grass Creek light crudes.

CALIFORNIA CRUDE

††Standard Oil Co. of California

Effective June 19, 1931

	Signal Hill *Seal Beach *Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda Brea Canon	Elwood Terrace	Torrance	Richfield	††Whittier ††La Habra Montebello	Coyote Hills	Santa Fe Springs	Newhall McKittrick Kern River	Midway Sunset Elk Hills Buena Vista Hills	Lost Hills	Coalinga	Wheeler Ridge	**Athens **Rosecrans **Dominguez	**Santa Paula	**Orcutt
Gravity																			
14–19.9	$0.65	$0.65	$0.65	$0.65	$0.65	....	$0.65	$0.65	$0.65	$0.65	....	$0.55	$0.55	$0.55	$0.55	$0.55	....	$0.65	$0.55
20–20.9	.65	.65	.66	.65	.66	....	.65	.65	.65	.65	....	....	.55	.55	.55	.55	....	.65	.56
21–21.9	.65	.65	.68	.66	.67	....	.65	.66	.65	.65	....	....	.55	.57	.55	.55	....	.65	.57
22–22.9	.65	.66	.70	.67	.68		.66	.68	.65	.65	....	....	.56	.59	.55	.55	....	.65	.59
23–23.9	.67	.68	.72	.68	.70		.67	.70	.65	.66	....	....	.58	.60	.55	.55	....	.65	.61
24–24.9	.69	.70	.74	.69	.72	F.o.b. Ship	.68	.72	.65	.67	$0.65	....	.61	.62	.55	.55	$0.69	.66	.63
25–25.9	.71	.72	.76	.70	.74		.70	.74	.65	.69	.65	....	.64	.64	.57	.55	.71	.68	.65
26–26.9	.73	.74	....		.76	....	....	....	....	.71	.65	....	.66	.66	....	....	.73	.70	.67
27–27.9	.75	.76	....		.78	....	....	....	....	.73	.68	....	.68	.67	....	....	.75	.72	....
28–28.9	.77	....	....		.80	....	....	....	....	.75	.71	....	.71	.69	....	....	.77	.74	....
29–29.9	.79	....	....		....	....	....	....	....	.77	.73	....	.74	.71	....	....	.79	.76	....
30–30.9	.81	....	....	Subject to field gathering charge of 5c per barrel.	....	....	....	....	....	.79	.75	....	.76	.72	....	....	.81	.78	....
31–31.9	....	....	....		....	....	....	....	....	....	.78	....	....	....	....	....	.83	....	....
32–32.9	....	....	....		....	....	....	....	....	....	.80	....	....	....	....	....	.85	....	....
33–33.9	....	....	....		....	$0.79	....	....	....	....	.83	....	....	....	....	....	.87	....	....
34–34.9	....	....	....		....	.81	....	....	....	....	.85	....	....	....	....	....	.89	....	....
35–35.9	....	....	....		....	.84	....	....	....	....	.87	....	....	....	....	....	....	....	....
36–36.9	....	....	....		....	.87	....	....	....	....	....	....	....	....	....	....	....	....	....

*Seal Beach and Alamitos Heights prices end with $0.75 for crude 27 and above

†Whittier and La Habra crude ends with 22-22.9 gravity.

**Posted by Union Oil Co. of California, effective June 20, 1931.

††Postings on Kettleman Hills, Ventura Avenue, Athens-Rosecrans and Dominguez discontinued by Standard. Kettleman Hills, 30 and above, posted at 66 cents by Associated Oil Co. and General Petroleum Co., June 19, 1931.

REFINERS' and COMPOUNDERS' SUPPLIES

Following are average market prices for materials used by refiners and compounders effective on the date shown.

Refiners' Supplies

	Sept. 14	Sept. 8
Soda Ash Light 58% bags, cwt.	$1.15-1.38	$1.15-1.38
Silicate of Soda 60 deg. drums ....cwt.	$1.75-1.90	$1.75-1.90
Silicate of Soda 40 deg. tank cars....cwt.	$0.70	$0.70
Silicate of Soda 40 deg. drums ....cwt.	$1.00	$1.00
Sal Soda wks.	$0.90-1.20	$0.90-1.20
Caustic Soda 76% solid..cwt.	$2.25-2.50	$2.25-2.50
Sulfuric Acid 60 deg. tank cars, f. o. b. shipping point per ton	$11.00-12.50	$11.00-12.50
Sulfur, flowers of....cwt.	$3.10-4.00	$3.10-4.00
Liquid Chlorine, tank cars, wks....lb.	1.75	1.75

Compounder's Supplies

	Sept. 14	Sept. 8
Vegetable Oils		
Linseed carloads, spot....lb.	7.60	7.80
Tanks, spot	7.00	7.20
Soya Bean, Tank, coast...lb	6.60	6.60
Oleic Acid		
Distilled, tanks....lb.	7.00	7.00
Distilled, bbls....lb.	7.875	7.875
Saponified, tanks....lb.	7.75	7.75
Saponified, bbls....lb.	7.625	7.625
Lard Oils		
Prime Winter Strained....lb.	11.75	11.75
Extra Winter Strained....lb.	7.50	7.50
Extra....lb.	7.25	7.25
Extra No. 1....lb.	6.875	6.875
No. 1....lb.	6.625	6.625
No. 2....lb.	6.00	6.00
Tallow oil....lb.	7.00	7.00
Neatsfoot Oil		
Pure, bbls....lb.	9.50	9.50
Extra, bbls....lb.	7.00	7.00
No. 1 bbls....lb.	6.75	6.75
Cold Pressed....lb.	13.25	13.25
Fish Oils		
Menhaden Oil		
Light Pressed....gal.	33-34	33-34
Light Pressed, tank cars, N. Y....gal.	27-28	27-28
Yellow bleached....gal.	41	41
Whale, extra winter bleached, ...gal.	68	68
Naval Stores		
Steam distilled turpentine, N. Y....gal.	38	38
Steam, distilled turpentine, Savannah....gal.	35	35
Gum turpentine, N. Y....gal.	50	50
Gum turpentine, f.o.b. cars Savannah....gal.	44	44
Wood Rosin, N. Y.....bbl.	$4.65	$4.65
Wood Rosin F, Savn'h...bbl.	$4.55	$4.55
Gum Rosin B, N. Y.....bbl.	$4.05	$4.05
Gum Rosin B, f.o.b. cars Savannah....bbl.	$3.30	$3.00
Rosin oil, pure....gal.	50	50
Rosin, oil, compounded..gal.	44	44
Pine Tar		
Kiln burnt....bbl.	$10.00-11.00	$10.00-11.00
Retort....bbl.	$11.00-12.00	$11.00-12.00
Alcohol		
Denatured Formula 5, in tanks, per gal.	24	24

How To Make Emulsions Told

BROOKLYN, N. Y., Sept. 8.—A booklet containing a number of actual working formulae for making emulsions of oils, fats, waxes and solvents has been published by Glyco Products Co., Inc., Bush Terminal Bldg. No. 5, here.

It is entitled "Emulsions—How To Make Them." Formulae for commercial polishes, such as furniture, automobile and metal, are applied easily and give a high polish which will not show finger prints, the company claims.

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Minnesota Jobbers Favor Elimination Of Loaning Equipment

DISCUSSION on the elimination of loaned equipment, a talk on advertising and merchandising by Howard Harrington, advertising manager of the Phillips Petroleum Co., Bartlesville, and a banquet in honor of Hjalmar Nilson, recently retired as state chief oil inspector, were the high lights of the annual fall meeting of the Minnesota division, Northwest Petroleum Association, Minneapolis, Sept. 8.

While no definite action was taken by the assembled jobbers regarding the elimination of loaning equipment, the discussion was distinctly favorable toward that end.

The Minnesota code committee, at a meeting following the afternoon session of the convention, recommended that all jobbers should discontinue the practice. No procedure was adopted at the meeting, but the understanding was that they would be drawn up shortly for the members' approval.

Investigations have been made by members of the code committee and it was found that most Minnesota jobbers were willing to follow the lead of the larger companies in getting rid of this practice.

"Having faith in your competitor, and faith in your products, are two of the biggest things in merchandising," said Mr. Harrington.

"No company can build a reputation for honest and square dealing, and be willing to always believe the worst of his competitor, whether or not he knows it to be the truth, and especially so if he meets the prices and follows the practices that he may hear about.

"Any person can, if he has faith in his product, build up a profitable business and keep it. No one can completely sell others on a product in which the salesman himself lacks confidence.

"Weed out your bad practices and eliminate your unsound accounts during these hard times. Put your business on a sound basis and the future should pay big dividends," he said.

Advertising that lacks good background is wasted advertising in Mr. Harrington's opinions. You can advertise extensively and get new customers into your stations, but if the customer doesn't get the service and attention he feels he is entitled to, then that customer will not come back, and much of your advertising has been wasted.

If all station attendants had the following five qualities there would be much better service given at stations, said Mr. Harrington. They are brains, good health, orderliness, cheerfulness and courtesy. A station where the attendants have these virtues would be a place where the motorist would get quick, intelligent, courteous service and leave feeling that his business had been appreciated and he would probably come back.

The banquet was in honor of Mr. Nilson, who for 22 years served in the oil inspection department ofthe state and was chief oil inspector for many years. He was largely responsible for the drafting and passage of the present state oil inspection law now in force. He was presented with a gift as a token of the esteem in which he and his past services are held by the oil men of the state.

Road Oil Congress Planned For Oct. 8-9 at Tulsa

TULSA, Sept. 12.—A Mid-Continent Road Oil congress will be held in Tulsa, Oct. 8 and 9, to create more interest in the proper oiling of secondary roads, and to instruct interested parties in correct methods.

The congress will be sponsored by the Oklahoma State Chamber of Commerce and the Tulsa Chamber of Commerce, with the active participation of the state organization of county commissioners and various highway associations in this section of the southwest.

L. C. Hutson, president of the Oklahoma State Chamber of Commerce has issued an official call for a special meeting of his organization at that time.

E. Bee Guthrie, good roads expert for the Tulsa Chamber of Commerce, is heading a committee at work on a program. Mr. Guthrie reports that the committee plans the issuance of invitations to several highway engineers of states in the middle west where extensive systems of secondary roads have been constructed with the use of road oil. Several of these engineers will be requested to prepare short papers on the subject, and to outline their experiences in oiling of roads.

Some of the papers will be prepared by technical men connected with refineries manufacturing road oils. Various samples of road oils will be on display, as well as the machinery necessary for its application to the roads.

The committee plans to have the papers and discussions Thursday and Friday morning, followed by a luncheon by the Tulsa Chamber of Commerce at noon Friday. Then a tour of inspection will be made over the oiled roads in Tulsa and adjoining counties.

A campaign of publicity for the congress will be conducted through daily newspapers serving this section of the country.

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"Service Man's Guide To Automotive Lubrication" is in non-technical language. The writing is concise. Technical terms are reduced to plain language. Common lubricant tests and automotive systems explained simply. A modern book—first printing June, 1931.

Here are the specifications: 117 pages—117 illustrations —20 chapters on the why and what of lubricants and the modern systems used in lubricating today's automobile. The writers: John R. Rathbun, M. E., automotive engineer, the author, and J. Howard Pile, editor of Chek-Chart, the editor. Published by Chek-Chart.

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Transactions in Oil Shares on New York Stock Exchange

1930 High	1930 Low	1931 High	1931 Low	Listed Shares	Par Value	Company	Div. Rate Period	Last Div. Paid	Transactions Week Ended Sept. 12 Sales Shares	High	Low	Last	Week's Change
31½	16½	23	15½	922,075	N.P.	Amerada Corp.	50cQ	July 31, 31	1,400	18	17⅛	17⅛	— ⅞
37	5⅛	12⅜	5	209,180	N.P.	American Republics Corp	....	.....	1,100	6	5	5	— 1
51	30	31	20	2,240,000	$25	Associated Oil Co.	25cQ	June 30, 31	.....	.....	.....	.....	.....
51⅜	16⅜	23⅜	11⅛	2,691,764	25	Atlantic Refining Co.	25cQ	June 15, 31	10,500	16	14¾	15	— 1
34	8⅜	14½	5¾	2,257,678	25	Barnsdall Corp. A	....	May 11, 31	10,500	8	7½	7⅞	— ⅜
35	21	25	12	2,060,966	25	California Petroleum Corp.	....	Jan. 1, 29	.....	.....	.....	.....	.....
20⅝	8¾	10¼	7½	1,444,970	N.P.	Colonial Beacon Oil Co.	....	.....	700	9⅛	9	9⅛	+ ⅛
30½	7¾	12	5	4,712,745	N.P.	Continental Oil Co. (Del.)	....	.....	26,600	8½	7⅞	8	— ⅜
71⅛	22⅜	47	15¼	413,333	N.P.	General Asphalt Co.	75cQ	June 15, 31	3,600	18¾	18	18¾	— ⅜
116⅞	29¼	68½	27	97,071	$100	Houston Oil Co.	....	.....	7,600	38½	34½	35½	— 3½
11¾	6⅝	14⅛	6	673,414	25	do new	....	.....	5,000	8¼	7⅝	7⅞	— ½
28⅜	3	4⅜	2	556,356	10	Indian Refining Co.	....	Dec. 15, 20	900	2¾	2¼	2¾	— ¼
12	3½	4½	2	1,309,003	N.P.	Louisiana Oil Ref'g. Corp.	....	.....	500	3	3	3	0
90	66	55	34	40,000	$100	do pfd	$1.62½Q	Aug. 15, 31	.....	.....	.....	.....	.....
10⅜	1¾	3¾	1	330,000	N.P.	Maracaibo Oil Exploration Co.	....	.....	100	1¾	1¾	1¾	— ⅛
182	150	171	150	459,428	$100	Mexican Petroleum Co.	....	Apr. 20, 31	.....	.....	.....	.....	.....
100	100	100	100	120,000	100	do pfd	$2Q	July 20, 31	.....	.....	.....	.....	.....
37	9¾	20⅜	10⅝	1,244,383	N.P.	Mexican Seaboard Oil Corp	....	Oct. 15, 24	.....	.....	.....	.....	.....
33	11	16¾	5¾	1,857,912	N.P.	Mid-Continent Petroleum Corp.	....	Feb. 16, 31	7,500	8½	7½	8	— 1
32	16	19½	7	6,648,052	N.P.	Ohio Oil Co.	....	Mar. 14, 31	10,000	10¼	9	9⅜	— ⅛
64¼	42	35⅛	25	1,000,000	$50	Pan Amer. Pet. & Trans. Co.	40cQ	July 20, 31	200	30	30	30	+ ⅛
67½	30	36½	24	2,473,577	50	do B non-voting	40cQ	July 20, 31	.....	.....	.....	.....	.....
12¾	1¾	4¼	1½	199,370	N.P.	Panhandle Prod. & Refg. Co.	....	.....	.....	.....	.....	.....	.....
80	47½	20	10	25,666	$100	do pfd	....	July 2, 23	.....	.....	.....	.....	.....
27¼	5⅞	10⅞	6	3,726,084	N.P.	Petroleum Corp. of America	25cQ	June 1, 31	16,900	7¾	6¾	6¾	— 1⅛
44⅜	11½	16⅝	4¾	4,416,251	N.P.	Phillips Petroleum Co.	....	Jan. 2, 31	14,400	7⅞	7	7⅛	— ⅛
2½	½	1½	½	1,184,917	$25	Pierce Oil Corp	....	.....	1,100	⅝	½	½	— ⅛
52	7½	23¾	6½	150,000	100	do pfd	....	Feb. 1, 22	200	9¼	9¼	9¼	— 1⅝
7⅛	1¾	3⅜	1	2,500,000	N.P.	Pierce Petroleum Corp	....	Feb. 16, 31	1,000	1⅝	1½	1⅝	— ⅛
54	11¼	20⅜	6½	2,441,432	$25	Prairie Oil & Gas Co.	....	Mar. 31, 31	2,000	9⅜	9⅝	9⅜	— ⅛
60	16⅜	26½	14½	4,050,000	25	Prairie Pipe Line Co.	75cQ	July 1, 31	4,200	15¼	†14½	14⅝	— ⅞
11⅞	1	6	1⅞	749,017	50	Producers & Refiners Corp.	....	Sept. 15, 23	300	2⅜	2⅜	2⅜	— ⅛
40	11½	16	6	56,907	50	do pfd	....	May 4, 25	90	6½	6½	6½	— 3⅛
27¼	7⅜	11⅞	5½	3,038,370	25	Pure Oil Co.	....	Sept. 1, 30	3,100	7⅞	7⅜	7⅛	— ⅞
114¼	90½	101⅞	66⅜	130,000	100	do 8% pfd.	$2Q	July 1, 31	60	86	84	85⅜	+ 3⅝
28¼	4⅛	6⅜	1	2,126,250	N.P.	Richfield Oil Co. (California)	....	Sept. 1, 30	1,200	1⅜	1¼	1¼	— ⅛
25¾	5	10¼	3⅛	1,235,542	N.P.	Rio Grande Oil Co.	....	July 25, 30	900	4	3⅜	3⅜	— ⅛
56½	36⅞	42⅝	18⅝	681,728	$13.40	Royal Dutch Co. (N. Y. Shares)	93.85c	Aug. 4, 31	8,200	20⅜	†18⅝	19⅝	2⅜
48⅜	26	34	13	68,810	£2	Shell Transp. & Trading Co.	72.6c	July 23, 31	10	13	†13	13	— 4½
25½	5¼	10¼	4½	13,070,625	N.P.	Shell Union Oil Corp.	....	June 30, 30	15,300	5¼	5	5⅛	— ⅛
106¼	55	78	25½	400,000	$100	do pfd	....	July 1, 31	1,900	35	31	31	— 4⅛
37	5⅜	11	5	869,271	10	Simms Petroleum Co.	....	Sept. 15, 30	1,500	7	5⅞	6	— 1
32	9¾	15⅞	6¼	6,148,294	N.P.	Sinclair Cons. Oil Corp.	....	Apr. 15, 31	28,800	9½	8¾	8¾	— ¾
112¼	86	103	77	141,294	$100	do pfd.	$2Q	Aug. 15, 31	.....	.....	.....	.....	.....
42	10⅛	12⅞	3⅛	1,000,069	25	Skelly Oil Co.	....	Dec. 15, 30	800	5½	5⅛	5⅜	+ ⅛
99¾	42	62	10	120,000	100	do pfd.	....	May 1, 31	1,000	28⅛	25¾	25¾	— 2⅝
....	....	21	16⅞	31,923,072	25	Socony Vacuum Corp.	40cQ	June 15, 31	36,700	18	†16⅞	17¼	— ¾
106⅜	98	105¼	99⅛	764,836	100	S. O. Export Corp. pfd.	$2.50 S.A.	June 30, 31	900	105¾	104½	105¾	+ 2¼
75	42¼	51¾	31⅛	13,102,900	N.P.	S. O. California	62½cQ	June 15, 31	25,600	39	36¼	36¼	— 2¾
49	14⅜	19	8¾	320,000	$25	S. O. Kansas	....	Mar. 16, 31	900	12	11	11	— 1¼
84⅜	43½	52½	30⅝	25,548,466	25	S. O. New Jersey	††25cQ	June 15, 31	66,600	38¼	35¾	35⅜	— 2⅞
46⅜	19¾	26	13⅞	17,849,353	25	S. O. New York	40cQ	June 15, 31	.....	.....	.....	.....	.....
70	39	45¼	31	1,544,275	N.P.	Sun Oil Co.	25cQ	June 15, 31	700	37½	37⅛	37½	+ ⅜
108½	97¾	104½	94	100,000	$100	do pfd.	$1.50Q	Sept. 1, 31	20	100	100	100	0
9⅜	⅝	1¾	⅝	776,979	N.P.	Superior Oil Corp.	....	.....	500	⅞	⅞	⅞	— ⅛
60½	28¼	36¼	18	9,851,163	$25	The Texas Corp.	50cQ	July 1, 31	51,400	24¼	20¼	21¼	— 3¼
14½	4	6½	2½	930,404	10	Texas Pacific Coal & Oil Co.	....	Dec. 31, 29	1,600	4	3½	3½	— ½
17¾	5⅜	9	4	5,996,965	N.P.	Tide Water Associated Oil Co.	....	Feb. 16, 31	17,800	6⅛	5⅜	5⅜	— ⅝
89¾	53	68	38	732,644	$100	do pfd.	$1.50Q	July 1, 31	200	49	48	48	— 2
31	12	18	10½	2,191,820	N.P	Tide Water Oil Co.	15cQ	June 30, 31	.....	.....	.....	.....	.....
94⅞	68	83	50¾	199,446	$100	do pfd.	$1.25Q	Aug. 15, 31	.....	.....	.....	.....	.....
50	20⅛	26⅜	14	2,325,006	25	Union Oil Co. of California	50cQ	Aug. 10, 31	8,800	17⅛	15⅛	16¼	— ¼
38½	23	25⅛	19¾	1,254,048	N.P.	Union Tank Car Co.	40cQ	Sept. 1, 31	1,500	20½	†19¾	19¾	— ¼
27	4½	7⅝	1⅜	769,531	N.P.	Warner Quinlan Co.	....	July 3, 30	700	2⅝	2⅛	2⅛	— ⅜
21	6½	9⅜	3½	428,967	N.P.	H. F. Wilcox Oil & Gas Co.	....	May 10, 28	1,600	4¾	4⅛	4½	— ⅛

•New high †New low ††Also extra—S. O. New Jersey 25c. Total sales 404,680

Pittsburgh Stock Exchange

Transactions Week Ended Sept. 12, 1931

	Sales	High	Low	Last	Change Over Week
Ark. Nat. Gas pfd	90	6	6	6	0
Lone Star Gas	8,191	15⅜	14¼	14¼	—1
‡ do pfd	50	101	100¼	100¼	— ¾
Phoenix Oil	2,000	.10	.10	.10	0
Plymouth Oil	50	9¼	9¼	9¼	—1¾
Shamrock Oil & Gas	275	2	2	2	0
‡†Western Public Service	3,519	6	5¾	5¾	— ⅜

‡Unlisted. †New low record.

General Electric Co., Schenectady, N. Y., has published a special booklet of 48 pages devoted entirely to electric equipment for oil refineries. It has been prepared to familiarize the refiner with some of the features of G-E products and their manner of application in a few instances.

Such a variety of products, electric, steam and mechanical, including pumps of every class for oil, brine, acid, and so on, and power station auxiliaries, fans and blowers, compressors, centrifuges, process machinery, Cottrell-precipitation apparatus, yard locomotives, etc., are described that only the general classifications can be touched upon here.

The first part of the booklet describes power generation and distribution and general application, illustrated by a typical switch rack and lighting arresters in the distribution system of a southwestern oil refinery, and a non-condensing, double-automatic-extraction turbine-generator in a Texas refinery.

The second part describes motors, including explosion-proof type for atmospheres containing inflammable gas; the third part, control equipment, and the fourth, other General Electric products, such as Selsyn units for remote control, centrifugal compressors, arc welders, turbines, turbine-generators and many others.

* * *

Trailer Co. of America, Cincinnati, which recently came into being through the merger of the Lapeer Trailer Co. and the Trailmobile Co., has appointed James J. Black sales engineer. Mr Black was formerly for nine years with the Lapeer company.

New York Bonds

Week Ending Sept. 11

	High	Low	Last	Change
Asso. Oil gold 6s	104	103⅝	103⅝	+ ⅛
Atlantic Refg. deb. 5s	102½	102	102½	0
Cal. Pet. 5s	82½	80	80	—1
Cal. Pet. 5½s	91	91	91	0
General Pet. 5s	103¼	103	103	+ ¼
Humble Oil & Refg. 5s	103¾	103½	103½	0
Humble Oil & Refg. 5½s	102⅜	102¼	102¼	— ⅛
Pan Amer. P & T 6s	102½	102	102	— ½
Pan Amer. P & T 6s	33¼	33⅛	33⅛	— ⅛
Phillips Pet. 5½s	66	63	63½	+ ¼
Pure Oil 5½s	89	88	88½	0
Pure Oil 5½s	84¾	84	84	— ⅝
Richfield Oil of Calif. 6s	26⅛	25½	25⅝	— ⅛
Shell Union Oil 5s	72	68	69	— 2½
Shell Union Oil 5s with war.	72¼	68½	69	— 3⅛
Sinclair Con. Oil 7s	96	94½	94½	— ¼
Sinclair Con. Oil 6½s	92¼	91⅞	91⅞	— ⅛
Sinclair Con. Crude 5½s	102⅜	102	102¼	— ¼
Sinclair Pipeline	101½	99⅝	100¼	— 1¼
Skelly Oil 5½s	64½	63	63	— 1¼
S. O. N. J. 5s	104⅝	104	104⅛	— ½
S. O. N. Y. 4½s	101	100⅝	100⅜	— ¼
Union Oil of Calif. 6s A	105½	105½	105½	0
Union Oil of Calif. 5s C	99¼	99	99	0
Warner-Quinlan 6s	41	41	41	0

New Stations Building

Note: Material used in this column is taken principally from newspapers. NATIONAL PETROLEUM NEWS assumes no responsibility for its accuracy. Headquarters of companies and addresses of individuals are given wherever possible.

The list as published from week to week cannot be looked upon as indicative of the relative extent to which stations are being built in various parts of the country.

Service Stations

Ft. Dodge, Ia.—The Texas Co., Houston, Tex.
Ranger, Tex.—Magnolia Petroleum Co., Magnolia Bldg., Dallas, Tex.
Pittsburgh, Kans.—B. F. Daugherty, Daugherty Tire Co., 105 West Third St.
Kingman, Kans.—Derby Oil Co., 353 N. Lawrence St., Wichita, Kans.
Isle, Minn.—Norman H. Swenson, Ogilvie, Minn.
Mandan, N. D.—Charles Story, Valley City, N. D.
Plattsmouth, Neb.—Charles V. Barrows, Murray Corner, Neb.
Madison, S. D.—Frank P. Hoisington, 3rd St. N. E.
Center, N. D.—Mrs. Mildred Stetson.
Morris, Minn.—Morris Co-Op Oil Assn., A. E. Nelson, Mgr.
Selby, S. D.—Joe Tribble, Mound City, S. D.
Rapid City, S. D.—Black Hills Independent Oil Co.
Fargo, N. D.—The Texas Co., 1517 Front St.
Grand Forks, N. D.—Clyde E. Noe, N. 3rd St.
Fargo, N. D.—White Eagle Oil Co., 322 5th St. N.
Columbus, O.—Standard Oil Co. of Ohio, Midland Bank Bldg., Cleveland, O.
Wellsville, O.—John H. Pultz, Fifteenth & Main St.
Cleveland, O.—Cities Service Co., 4700 Prospect Ave., Cleveland, O.
Columbus, O.—Cities Service Co., 4700 Prospect Ave., Cleveland, O.
Columbus, O.—J. E. Bulen, 6 North High St.
Des Moines, Ia.—L. H. Kurtz Co., 312-14 Walnut St.
Howard, S. D.—Dacotah Oil Co.
Columbus, O.—P. J. Wood, 39 West Broad St.
Portsmouth, O.—Mrs. Tillie Boyer, Second and Washington Sts.
Logan, O.—Standard Oil Co. of Ohio, Midland Bank Bldg., Cleveland, O.
McHenry, Ill.—Nick Freund.
Pocahontas, Ill.—Lincoln Oil Co.
Weyauwega, Wis.—Herman Auklam.
Delta, Mich.—Delta Oil Co.
Girard, O.—Sam Gold, Ward Ave.
Flandreau, S. D.—The Texas Co., Houston, Tex.
Superior, Wis.—Fred Wilson.
Philadelphia, Pa.—Standard Oil Co. of Pennsylvania, 545 Peoples Gas Bldg., Philadelphia.
Pitman, N. J.—Standard Oil Co. of New Jersey, 26 Broadway, New York, N. Y.
Newton, Mass.—Louis Volpe and Joseph Allison, Centre and Willow Sts.
New Haven, Conn.—New Haven Republican Club, Crown and Temple Sts.
Utica, N. Y.—James Casper, South St. and Taylor Ave.

Bulk Stations

East Burlington, N. J.—Standard Oil Co. of New Jersey, 26 Broadway, New York, N. Y.

THE OIL INDUSTRY EXCHANGE

Positions Wanted

EXPERIENCED MARKETER petroleum products desires permanent connection. Twenty years experience in bulk and service station sales, refinery sales, lubrication and grease manufacture. Address Box 771.

PAINT AND VARNISH EFFICIENCY EXPERT desires new connection, as supervisor of trucks, service pumps and station painting. Can reduce maintenance cost. Address Box 781.

SUPERINTENDENT (or what have you) available for foreign or domestic service. Experienced in complete refinery operations and construction. Petroleum chemist. Address Box 785.

SALES ENGINEER—Seven years experience, 27 years old. Married. Thorough knowledge petroleum products and their application. Also experience oil refinery process control instruments. Position small company preferred. Also experienced testing petroleum products. Address Box 787.

Situations Open

SALES EXECUTIVE

An eastern marketing and export organization desires a sales executive with major company experience to operate our New York office. Furnish full details, name will be held in confidence.

ADDRESS C A F, Room 1124
342 Madison Ave., New York City

Miscellaneous

WHAT IT COSTS

"For Sale," "Wanted to Buy," "Help Wanted," "Business Opportunities."

"Miscellaneous" classifications, set in type this size without border—10 cents a word. Minimum charge, $3.00.

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Advertisements set in special type or with border—$4.00 per column inch.

Copy must reach us not later than Friday preceding date of issue.

All advertisements carried on this page are payable in advance.

Equipment Wanted

GOOD USED OIL OR GAS ENGINES WANTED with generators seventy-five to one hundred fifty KW. Address Purchasing Dept., Fairmont Creamery Co., 1206 Jones, Omaha, Nebr.

For Sale

ANIMALS FOR GAS AND OIL STATIONS. Three mink, one badger, two red foxes, four alligators, one lynx, one pair deer, three ring neck pheasants, two eagles. Address, Bert Gibson, Ottumwa, Iowa.

Business Opportunities

SALES ORGANIZATION with representatives in field selling to wholesale and retail oil business wants new line product for Chicago and vicinity. Can give full representation.

Address Box 784.

EXCLUSIVE REPRESENTATION WANTED

for the Atlantic seaboard and export trade. Will consider a responsible Pennsylvania refiner, one Mid-Continent or Texas. We furnish New York office complete organization. Commission terms.

Address X Y Z, Room 1124
342 Madison Ave., New York City

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Incorporated
Engineering—Design—Construction
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Consultation Invited on Building Projects
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412 Washington Street, Reading, Penna.

ROYAL E. BURNHAM
Attorney-At-Law
Patent and Trade Mark Practice
Exclusively
Continental Trust Building
Washington, D. C.

Advertisers having box numbers should be addressed in care of National Petroleum News, 1213 West 3rd Street, Cleveland, Ohio, unless otherwise specified.

Standard Oil Stocks on New York Curb Market

1930 High	1930 Low	1931 High	1931 Low	Shares Issued	Par Value	Company	Div. Rate Period	Last Div. Paid	Transactions Week Ended Sept. 12 Sales Shares	High	Low	Last	Week's Change
25	11¼	16	6¼	40,000	$25	Borne Scrymser Co.	....	Oct. 15, 30	.....	....	....	....	....
69	39⅞	56	40	200,000	50	Buckeye Pipe Line Co.	$1Q	June 15, 31	.....	....	....	....	....
184⅞	100¼	129½	101	120,000	25	Chesebrough Mfg. Co.	††$1Q	June 30, 31	.....	....	....	....	....
7⅝	3	3½	2	5,977,873	N.P.	Creole Petroleum Co.	....	.....	14,700	2⅜	2¼	2¼	— ⅛
65¾	20¼	39	20⅜	30,000	50	Cumberland Pipe Line Co.	50cQ	June 15, 31	200	27⅜	27¼	27¼	— ⅛
54¾	26	36	24	50,000	100	Eureka Pipe Line Co.	$1Q	July 1, 31	100	32	32	32	— 2⅛
6¾	2½	3	1	280,000	N.P.	Galena Oil Corp.	....	.....	200	2	2	2	— ¼
119	57¼	72	49⅞	2,974,645	$25	Humble Oil & Ref'g. Co.	50cQ	July 1, 31	1,800	60	57	57	— 3
30	15	18½	9⅞	26,557,496	N.P.	Imperial Oil Corp.	12½cQ	Sept. 1, 31	5,800	13	12⅛	12¾	— ¼
28	15	18	10	.....	N.P.	do registered	12½cQ	Sept. 1, 31	.....	....	....	....	....
41	14½	21⅜	9⅛	300,000	$10	Indiana Pipe Line Co.	25cQ	Aug. 15, 31	200	11	10¼	10¼	— 1⅜
24	11⅜	15½	8¾	14,247,088	N.P.	International Petroleum Co.	25cQ	June 15, 31	16,600	12	11⅝	11¾	— ¼
22⅜	11½	17½	11¼	509,000	$12.50	National Transit Co.	25cQ	June 15, 31	800	12	11½	11½	— ⅜
21	10⅝	14½	7½	100,000	10	New York Transit Co.	††15cQ	July 15, 31	100	8	8	8	— ¾
54	26¼	34¼	25	40,000	50	Northern Pipe Line Co.	††$1.50Q	July 1, 31	.....	....	....	....	....
108	100⅝	102⅞	80	579,465	100	Ohio Oil Co. pfd.	$1.50Q	June 15, 31	100	92	92	92	— ⅜
32	12	15½	8	400,000	25	Penn Mex. Fuel Co.	75c	June 24, 31	.....	....	....	....	....
33	4⅞	16½	3¼	160,000	25	Solar Refining Co.	....	Dec. 20, 29	900	16¼	16⅛	16⅛	0
20¼	6¾	17	10	100,000	10	Southern Pipe Line Co.	50cQ	Sept. 1, 31	.....	....	....	....	....
45⅞	18	23⅞	12⅜	1,200,000	25	South Penn Oil Co.	25cQ	June 30, 31	1,000	16¾	16	16¾	+ ⅜
64	32	42½	31¼	35,000	50	Southwest Pa. Pipe Lines	$1Q	July 1, 31	100	42	42	42	+ ½
59⅞	30	38½	19⅛	16,850,587	25	S. O. Indiana	50cQ	June 15, 31	24,000	25¾	24½	24¾	— ⅜
40½	18⅞	23⅛	15⅝	2,588,735	25	S. O. Kentucky	40cQ	June 30, 31	1,700	20	18¾	18¾	— ¾
48⅞	34	36½	19¼	190,822	25	S. O. Nebraska	50cQ	June 20, 31	.....	....	....	....	....
108½	43¼	62½	35	766,667	25	S. O. Ohio	62½cQ	July 1, 31	50	50	50	50	0
....	....	115¼	100	120,000	100	do 5% pfd.	$1.25Q	July 15, 31	40	101½	101½	101½	— ½
10	4	10	2⅝	34,158	25	Swan Finch Oil Corp.	....	Jan. 15, 29	.....	....	....	....	....
97⅛	45⅜	69¾	22⅛	5,624,158	25	Vacuum Oil Co.	50cQ	June 20, 31	.....	....	....	....	....

*New high †New low ††Also extra—Chesebrough 50c; N. Y. Transit 10c; Northern P. L. 50c.

Oil and Royalty Stocks on New York Curb

1930 High	1930 Low	1931 High	1931 Low	Par Value		Transactions Sales Shares	Week Ended High	Low	Last	Sept. 12 Week's Change
4½	½	1¾	½	N.P.	American Maracaibo.	800	½	½	½	— ⅛
16¾	4⅝	6½	3⅛	N.P.	Arkansas Nat. Gas.	500	3⅞	3¾	3¾	— ¼
16⅝	4⅝	6¾	3	N.P.	do A.	7,300	4	3⅝	3¾	— ⅜
8⅛	6¼	7	5⅛	$10	do pfd.	1,200	5⅞	5⅞	5⅞	0
1	⅛	1	⅛	N.P.	Atlantic Lobos	.....	....	....	....	....
1½	⅛	3¼	⅜	$50	do pfd.	.....	....	....	....	....
21	13⅜	16⅞	8½	N.P.	British American coup.	.....	....	....	....	....
....	....	16¾	10	N.P.	do registered	600	*16¾	16⅝	16⅝	+ 2
2¾	⅝	2⅜	½	$¼	Carib Syndicate	1,000	⅞	¾	¾	— ⅛
44¼	13⅛	20⅜	8⅝	N.P.	Cities Service	71,100	10	9⅛	9⅜	— ¾
93⅞	78¼	84¼	61¼	$100	do pfd.	1,100	63⅛	62¼	63⅛	0
9	7¼	7½	5⅛	10	do pref. B.	100	5¾	5¾	5¾	0
89¼	80	84	59½	100	do pref. BB.	50	73	73	73	— ½
8¼	1¼	3⅛	¾	N.P.	Colon Oil Corp.	1,500	1¼	1⅛	1⅛	— ⅛
21	3⅜	7⅛	2	N.P.	Col. Oil & Gas. vtc.	1,100	3¼	2⅞	2⅞	— ⅛
5⅞	2	2¾	1¼	$1	Consolidated Royalty.	500	1⅝	1⅝	1⅝	+ ⅛
74¾	1¼	3¾	1	N.P.	Cosden Oil	4,800	2⅜	1⅛	1¾	+ ¾
70	10½	15	1	$100	do pfd.	4,800	2⅜	1⅛	1⅜	— 1⅛
1	¼	⅝	⅛	N.P.	Crown Central Petrol.	500	¼	†⅛	⅛	— ⅛
21¾	2½	5	2	N.P.	Darby Petroleum	100	3¼	3¼	3¼	— ½
11	2	6	2½	N.P.	Derby Oil & Refining.	500	3⅜	3⅛	3⅛	— ⅜
60	30	40⅛	26	N.P.	do pfd.	.....	....	....	....	....
106¼	58½	76	38	$25	Gulf Oil Corp.	6,200	53½	50⅛	51	— 4
40¾	36	9¼	9¼	....	Honolulu Oil Corp.	.....	....	....	....	....
47½	12⅝	16⅞	8¾	N.P.	Indian Ter. Ill'g. Oil A	200	9⅝	†8¾	8¾	— ⅞
53½	12⅝	16⅞	8⅞	N.P.	do B.	1,200	9⅝	†8⅞	8⅞	— ¾
1¾	⅝	⅞	¼	$5	Intercontinental Petrol.	4,800	1/16	1/16	1/16	0
3	⅞	1⅞	½	N.P.	Kirby Petroleum	100	½	½	½	— ⅜
4¾	½	1½	½	$25	Leonard Oil Devel.	.....	....	....	....	....
29	4⅞	6¾	3½	N.P.	Lion Oil Refining	200	4½	4¼	4¼	— ¾
55⅞	19⅝	29	14⅛	N.P.	Lone Star Gas	4,100	15⅛	13¾	13¾	— 1½
31	5½	....	....	$25	MacMillan Petroleum.	.....	....	....	....	....
½	⅛	½	⅜	$1	Magdalena Syndicate.	5,700	1/16	1/16	1/16	0
16	3	5	3½	N.P.	Margay Oil Co.	100	4	4	4	0
7½	1¾	4⅞	1½	N.P.	Mexico-Ohio Oil	400	3¾	3½	3½	— ¼
....	....	8½	2	N.P.	Michigan Gas & Oil.	.....	....	....	....	....
11⅞	2¼	4⅝	2¼	N.P.	Mid. States Pet. A vtc.	100	2¾	2¾	2¾	+ ¼
6	⅝	1½	¾	N.P.	do B vtc.	500	¾	¾	¾	— ⅛
36½	5	11	3⅞	$5	Missouri-Kansas P.L.	.....	....	....	....	....
6	⅛	⅝	⅛	1	do B vtc.	.....	....	....	....	....
⅝	⅛	⅜	⅛	1	Mountain & Gulf.	.....	....	....	....	....
12½	3⅜	5⅞	3⅛	10	Mountain Producers.	300	4⅝	4½	4½	— ⅝
41⅜	19⅞	26½	16⅞	N.P.	National Fuel Gas.	1,600	17¾	17⅛	17¼	— ¾
3½	1⅛	1½	½	$5	New Bradford Oil.	800	1	¾	¾	— ¼
3⅜	2⅛	2⅜	2	10	New England Fuel.	500	1½	1½	1½	— ½
16⅞	4	....	....	25	N. Y. Pet. Royalty.	.....	....	....	....	....
....	....	6½	6½	10	N. American Oil.	.....	....	....	....	....
11¼	2½	3¼	1⅜	N.P.	North Central Texas.	.....	....	....	....	....
4⅜	⅜	2½	⅜	N.P.	North European Oil.	4,200	¾	½	⅝	— ⅛
11⅜	3½	5	1	N.P.	Oilstocks Ltd. A.	.....	....	....	....	....
11½	4½	5	2½	N.P.	do B.	.....	....	....	....	....
19½	5½	15	4⅝	N.P.	Pacific Western Oil.	100	5¼	5¼	5¼	— ½
2½	¼	¾	⅛	N.P.	Pandem Oil	2,100	⅛	⅛	⅛	0
4⅜	1	2	⅜	N.P.	Pantepec of Venezuela.	4,100	½	⅜	⅜	0
5⅞	⅛	1⅜	⅛	....	Petroleum Corp. war.	100	½	½	½	0
27½	16¼	19	6⅝	$5	Plymouth Oil.	700	9⅞	9	9¼	— 1⅛
8	3⅛	4½	½	N.P.	Producers Royalty.	1,800	¾	†½	¾	— ⅛
99	81¾	83½	15¾	$100	Pure Oil 6% pfd.	.....	....	....	....	....
10½	1½	2½	1¾	N.P.	Red Bank Oil.	.....	....	....	....	....
5⅜	⅝	2¼	½	N.P.	Reiter-Foster Oil.	3,900	1⅝	1½	1½	— ⅜
23½	6½	11	1⅛	$25	Richfield Oil pfd.	.....	....	....	....	....
25	2¼	3½	1¾	N.P.	Root Refining pfd.	.....	....	....	....	....
12⅛	5½	3¾	1	$10	Roy. Corp. of Amer. pfd	.....	....	....	....	....
8⅝	2	2⅞	1¼	N.P.	Ryan Consolidated.	100	1⅝	1⅝	1⅝	— ⅜
2½	½	1⅜	½	$10	Salt Creek Consol.	.....	....	....	....	....
15¼	5¼	7⅝	4	10	Salt Creek Producers.	800	5⅜	5½	5½	— ½
8	1¾	5¼	2	25	Shreve. El Dorado P.L.	.....	....	....	....	....
17	6	7½	3¾	N.P.	Southland Royalty.	500	5⅜	4¾	4¾	— ¾
10	2	5¼	1	$5	Sunray Oil.	6,000	1⅜	1	1¼	— ⅛
19½	8	12⅞	7½	N.P.	Texon Oil & Land.	400	8	7¾	8	— ⅛
47½	19	24½	13¼	$25	Union Oil Associates.	.....	....	....	....	....
4½	⅝	1⅞	⅝	5	Venezuela Petroleum.	100	¾	¾	¾	0
5	2	3½	2⅜	1	Woodley Petroleum.	.....	....	....	....	....
2½	⅜	2¼	¼	N.P.	Y Oil & Gas.	1,400	⅜	⅜	⅜	0

*New high. †New low.

Oil Dividends

Declared Last Week

Company and Period	Amount	Payable	Stock of Record
Gulf Oil Corp. q.	37½c	Oct. 1	Sept. 2
McColl Frontenac Oil pfd. q.	$1.50	Oct. 15	Sept. 30
Texon Oil & Land q.	25c	Sept. 30	Sept. 15
Tide Water Assoc. Oil pfd. q.	$1.50	Oct. 1	Sept. 21

Awaiting Payment

Company and Period	Amount	Payable	Stock of Record
Amer. Natl. Gas pfd. q.	15c	Oct. 1	Sept. 15
Atlantic Refg. q.	25c	Sept. 15	Aug. 21
British American q.	20c	Oct. 1	Sept. 14
Buckeye Pipe Line q.	$1	Sept. 15	Aug. 21
Chesebrough Mfg. q.	$1	Sept. 30	Sept. 11
do extra	50c	Sept. 30	Sept. 11
Cities Serv. m.	2½c	Oct. 1	Sept. 15
do stock m.	½%	Oct. 1	Sept. 15
do pfd. m.	50c	Oct. 1	Sept. 15
do pfd. B m.	5c	Oct. 1	Sept. 15
do pref. BB m.	50c	Oct. 1	Sept. 15
Humble Oil & Refg. q.	50c	Oct. 1	Sept. 1
International Pet. q.	25c	Sept. 15	Aug. 31
Lone Star Gas q.	22c	Sept. 30	Sept. 15
Mountain Prod. q.	25c	Oct. 1	Sept. 15
National Refining q.	12½c	Nov. 15	Nov. 1
New York Transit q.	15c	Oct. 15	Sept. 25
do extra	10c	Oct. 15	Sept. 25
N. Cent. Texas pfd. q.	$1.62½	Oct. 1	Sept. 10
Ohio Oil pfd. q.	$1.50	Sept. 15	Aug. 22
Pure Oil 5¼% pfd. q.	$1.25	Oct. 1	Sept. 10
do 6% pfd. q.	$1.50	Oct. 1	Sept. 10
do 8% pfd. q.	$2	Oct. 1	Sept. 10
Socony-Vacuum q.	40c	Sept. 15	Aug. 21
South Penn Oil q.	25c	Sept. 30	Sept. 15
S. W. Pa. Pipe Lines q.	$1	Oct. 1	Sept. 15
S. O. California q.	62½c	Sept. 15	Aug. 4
S. O. Indiana q.	25c	Sept. 15	Aug. 15
S. O. Kentucky q.	40c	Sept. 30	Sept. 15
S. O. Nebraska q.	50c	Sept. 21	Aug. 27
S. O. New Jersey q.	25c	Sept. 15	Aug. 17
do extra	25c	Sept. 15	Aug. 17
S. O. Ohio q.	62½c	Oct. 1	Sept. 15
do pfd. q.	$1.25	Oct. 15	Sept. 30
Sun Oil q.	25c	Sept. 15	Aug. 25
Texas Corp. q.	50c	Oct. 1	Sept. 4
Valvoline Oil q.	$1.50	Sept. 15	Sept. 8
do pfd. q.	$2	Oct. 1	Sept. 21

New York Curb Bonds

Week Ending Sept. 11

	High	Low	Last	Change
Beacon Oil 6s '36	98	98	98	0
Cities Serv. 5s '66	61½	59¾	59¾	—2
Cities Serv. 5s '50	63	59½	61	—2
Cities Serv. G. 5½s '42	61⅛	60¼	60¼	—1
Cities Serv. G. P. 6s '43	77¾	77¼	77¼	— ½
Empire O & R 5½s '42	55¼	54⅝	54⅝	— ⅝
Gulf Oil 5s '37	103	102⅝	103	+ ¼
Gulf Oil 5s '47	102⅜	101½	101½	— ⅞
Indep. Oil 6s '39	91	90	91	—3
Sun Oil 5½s '39	101½	101	101	— ¼

Drastic Cut Made in Short Haul Oil Rail Rates in Texas

TULSA, Sept. 12

THREE important announcements with reference to petroleum tariffs in Texas were made this week. They were:

(1) Issuance of an order by the Texas Railroad Commission reducing drastically the short haul rail rates on refined products for intrastate movement, the new schedule of rates becoming effective Sept. 10.

(2) Announcement by railroads serving the East Texas oil fields of the filing of a tariff providing a rate of 16.5 cents per 100 pounds for crude oil shipped from East Texas points to refining centers in Oklahoma, the new rate to become effective Sept. 15.

(3) Notice by the Texas Railroad Commission of a pipeline and common carrier hearing at Austin Sept. 23.

That the reduction in short haul rates on refined oils was drastic can be gained from the fact that in many instances the new rates are more than 50 per cent lower than the former rates.

Refinery traffic men interested in these new rates see in them the curtailment of gasoline movement by tank trucks in Texas. With the former high levels for short hauls, trucking was engaged in extensively in that state. The traffic manager for one large company said there undoubtedly were a number of inefficient trucking companies who could operate on the basis of the former rates, but who will be unable, due to inefficiency, to meet the new rail rates.

In Table No. 1 are listed the old and the new rates. No distinction is made in the new rates between single line and joint line rates.

The former rates reached their maximum for intrastate movement at 130 miles, with a rate of 39.5 cents per 100 pounds, as compared with the 1300 miles maximum at 66 cents provided by the new rates.

For a specific example of the reduction, the old and new rates between Dallas and Fort Worth are cited. The highway distance between the two cities is slightly more than 30 miles. The former rail rate was 24 cents per 100 pounds on gasoline. The new rate is 12 cents per 100 pounds.

Several weeks ago the Katy railroad proposed a rate of 14 cents per 100 pounds for crude oil from East Texas to certain refining points in Oklahoma. That proposal later was abandoned, and then all the railroads serving that district announced the uniform rate of 16.5 cents per 100 pounds from East Texas to virtually all refining points in Oklahoma.

That rate is equal to 51.28 cents per barrel. It is the same rate as the Missouri Pacific had previously put into effect for one line movement to Kansas points.

On the basis of 68 cents a barrel for East Texas crude, that price being the one posted by the majority of purchasers in that field, the delivered cost per barrel of crude to Oklahoma plants would now be $1.19. That would make East Texas crude cost Oklahoma refiners considerably more than Oklahoma oil at the 70 cents a barrel posting, plus the gathering and pipeline costs.

The rate hearing at Austin, the railroad commission has announced, will be under the provisions of the common carrier pipeline bill passed by the forty-first legislature and amendments passed by the first called session of the forty-second legislature.

Indiana Jobbers Meet In December

INDIANAPOLIS—The Indiana Petroleum Association will hold its semi-annual convention Dec. 2 and 3 at the Hotel Severin at Indianapolis, according to Max L. Wickersham, executive secretary.

Table No. 1

Comparison of New and Former Short Haul Rail Rates on Refined Oils for Intrastate Movement in Texas

DISTANCE Miles	OLD RATES (Cents per Cwt.) Single Line	Joint Line	NEW RATES (Cents per Cwt.) Single and Joint Line
10 and less	15.5	21	9
20 and over 10	18.5	24.5	10
30 and over 20	23	28.5	11
40 and over 30	24.5	29.5	12
50 and over 40	26.5	31.5	13
60 and over 50	28.5	33.5	14
70 and over 60	29.5	34.5	15
80 and over 70	32.5	37	16
100 and over 90	35	39.5	18
110 and over 100	37	39.5	19
120 and over 110	38.5	39.5	20
130 and over 120	39.5	39.5	21

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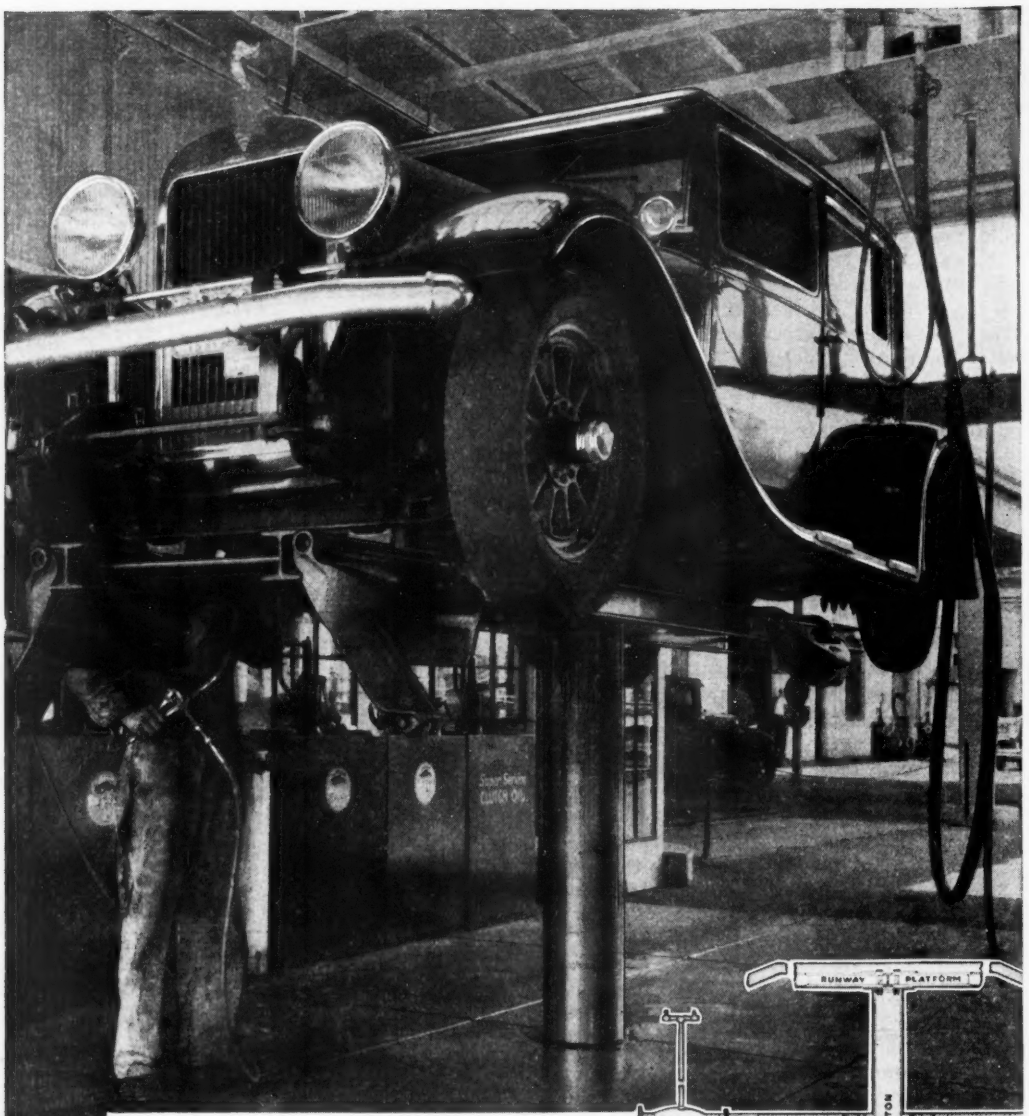

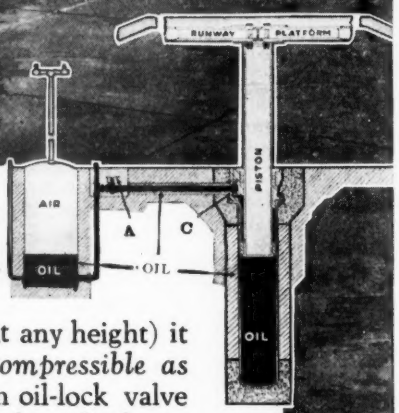

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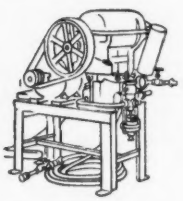

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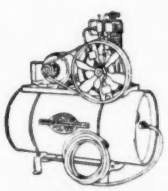

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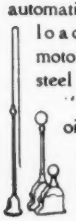

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